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The World Bank

Report No: ICR00004161

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-50000TF-11741)

ON A

CREDIT

IN THE AMOUNT OF SDR 12.7 MILLION
(US$ 20.0 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOLDOVA

FOR THE

GOVERNANCE E-TRANSFORMATION PROJECT

June 26, 2017

Transport and ICT Global Practice (GTIDR)
ECCMD - World Bank Office: Chisinau
Eastern Europe and Central Asia

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 18, 2017)

Currency Unit = Moldova Lei (MDL)
MDL 17.97 = US$ 1
US$ 0.054 = MDL 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BIZTAR	Business Regulatory and Tax Administration Reform Project
CAPEX	Costs related to acquiring and upgrading of fixed assets
C/B	Cost benefit ratio
CIO	Chief Information Officer
CLRA	Cadastre and Land Relations Agency
CPS	Country Partnership Strategy
CTS	Center of Special Telecommunications
eGC	e-Government Center
EOI	Expression of Interest
GeT	Governance e-Transformation
GoM	Government of Moldova
G2B	Government-to-business
G2C	Government-to-citizens
G2E	Government-to-employees
G2G	Government-to-government
ICB	International competitive bidding
ICT	Information and communications technologies
IT	Information technology
M-Cloud	Moldova Cloud (Government Cloud Computing Infrastructure)
M&E	Monitoring and Evaluation
MoICT	Ministry of Information Technology and Communications
NCB	National competitive bidding
NDS	National Development Strategy
OGDI	Open Government Data Initiative
OPEX	Operational expenditure
PC	Personal computer
PDO	Project development objective
PIU	Project Implementation Unit

PPP	Public-private partnership
ROI	Return on investment
SC	State Chancellery
SMEs	Small and medium enterprises
SOEs	State owned enterprises
TA	Technical assistance
TORs	Terms of reference
UNDP	United Nations Development Program

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MOLDOVA
Governance e-Transformation Project

CONTENTS

A. Basic Information

Country:	Moldova	Project Name:	Governance eTransformation Project
Project ID:	P121231	L/C/TF Number(s):	IDA-50000,TF-11741
ICR Date:	03/20/2017	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	REPULIC OF MOLDOVA
Original Total Commitment:	USD 20.00M	Disbursed Amount:	USD 18.42M
Revised Amount:	USD 20.00M		
Environmental Category: C			
Implementing Agencies: eGovernment Center (eGC)			
Cofinanciers and Other External Partners: Government of the Netherlands, TF contribution			

B. Key Dates

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	03/11/2010	Effectiveness:	09/29/2011	09/28/2011
Appraisal:	04/15/2011	Restructuring(s):		06/26/2015
Approval:	06/09/2011	Mid-term Review:	05/12/2014	03/04/2014
		Closing:	12/31/2016	12/31/2016

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Highly Satisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Highly Satisfactory
Borrower Performance:	Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)

Bank	Ratings	Borrower	Ratings
Quality at Entry:	Highly Satisfactory	Government:	Satisfactory
Quality of Supervision:	Highly Satisfactory	Implementing Agency/Agencies:	Highly Satisfactory
Overall Bank Performance:	Highly Satisfactory	**Overall Borrower Performance:**	Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes

Major Sector/Sector	Original	Actual
Information and Communications Technologies		
Other Information and Communications Technologies	7	7
ICT Services	14	14
ICT Infrastructure	9	9
Public Administration - Information and Communications Technologies	70	70
Major Theme/Theme/Sub Theme	**Original**	**Actual**
Private Sector Development		
Business Enabling Environment	5	5
Innovation and Technology Policy	5	5
Jobs	26	26
Job Creation	26	26
Public Sector Management		
Public Administration	14	14
Administrative and Civil Service Reform	2	2
Transparency, Accountability and Good Governance	14	14
Urban and Rural Development		
Rural Development	26	26
Rural Infrastructure and service delivery	26	26
Urban Development	26	26
Urban Infrastructure and Service Delivery	26	26

E. Bank Staff

Positions	At ICR	At Approval
Regional Vice President:	Cyril E Muller	Philippe H. Le Houerou

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F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

The project development objective (PDO) is to transform delivery of selected public services using ICT. This objective will be achieved by: (a) improving leadership capacity, enabling environment and management of ICT in the public sector; (b) using a modern service delivery platform to improve access to public services, and (c) increasing transparency in the public sector.

Revised Project Development Objectives (as approved by original approving authority)

Not applicable.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Direct project beneficiaries (number), of which female (percentage)			
Value quantitative or Qualitative)	0	300,000 / 50%		634,137 / 51,8%
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	Direct project beneficiaries are people who directly derive benefits from an intervention. In this project, it is citizens that access public services via the government portal and mobile phones.			
Indicator 2 :	Citizen perception of quality of public service			
Value quantitative or Qualitative)	N/A	60%		66%
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures the degree of users' satisfaction with the overall quality of transaction processing for the main public service (citizens' portal) targeted by the project.			

Indicator 3 :	Citizen uptake of e-government

Value quantitative or Qualitative)	7%	25%		43,6%
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures the percentage of population who accessed a government website at least once over the previous 12 months. Measured by a citizen survey.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	People trained under the project			
Value (quantitative or Qualitative)	0	2000		2,667
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures the total number of people trained under the project.			
Indicator 2 :	Public support for e-Government			
Value (quantitative or Qualitative)	53%	70%		73%
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	Percentage of population who would like to access public services through the internet or mobile phone measured by citizen survey.			
Indicator 3 :	Data sets available on the Open Government Data website			
Value (quantitative or Qualitative)	50	600		937
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures how many machine-readable data sets will be available on the OGD website. In addition to measuring the total number, eGC will ensure that all high value datasets in real demand by citizens and businesses are included.			

| Indicator 4 :	Uptake of shared e-Government infrastructure (M-Cloud)			
Value (quantitative or Qualitative)	0	25%		53,73%
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures the percentage of central government agencies that have migrated one or more of their service /applications onto M-Cloud			
Indicator 5 :	Visits to Government Services Portal			
Value (quantitative or Qualitative)	0	400,000		1,097,331
Date achieved	06/09/2011	06/10/2011		12/30/2016
Comments (incl. % achievement)	This indicator measures the number of unique visits to the government services portal.			

G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	09/21/2011	Satisfactory	Satisfactory	0.00
2	02/05/2012	Satisfactory	Moderately Satisfactory	0.80
3	10/29/2012	Satisfactory	Moderately Satisfactory	2.29
4	02/03/2013	Satisfactory	Moderately Satisfactory	3.41
5	09/02/2013	Satisfactory	Moderately Satisfactory	4.33
6	11/22/2013	Moderately Satisfactory	Moderately Unsatisfactory	5.29
7	06/20/2014	Moderately Satisfactory	Moderately Unsatisfactory	6.94
8	01/08/2015	Moderately Satisfactory	Moderately Unsatisfactory	8.32
9	06/26/2015	Moderately Satisfactory	Moderately Satisfactory	9.69
10	12/24/2015	Satisfactory	Satisfactory	12.61
11	06/24/2016	Satisfactory	Satisfactory	14.71
12	02/19/2017	Satisfactory	Satisfactory	18.32

H. Restructuring (if any)

| Restructuring Date(s) | Board Approved PDO Change | ISR Ratings at Restructuring | | Amount Disbursed at Restructuring in USD millions | Reason for Restructuring & Key Changes Made |
		DO	IP		
06/26/2015		MS	MS	9.69	There was a change in funding allocations which formally required a restructuring, effectively allocating remaining funds from the project preparation advance to project implementation, in June 26, 2015. This did not impact or modify the project development objective or indicators and did not in any other way materially affect the project.

I. Disbursement Profile
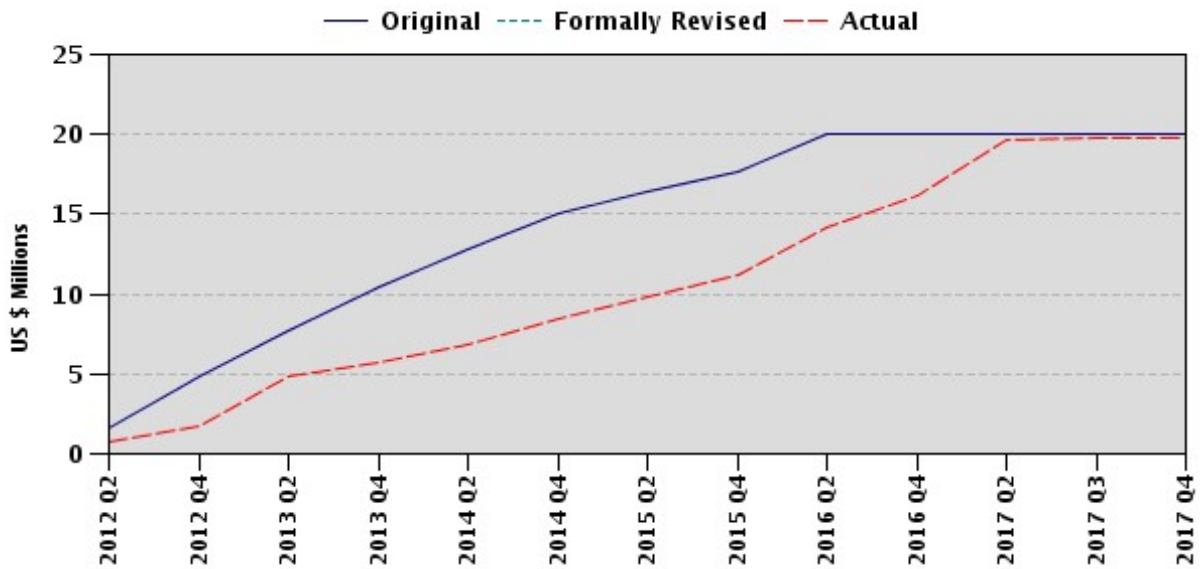
1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

General Country Context

1. At project appraisal, Moldova was one of the poorest countries in Europe with a GDP per capita of $1,516 (2009). About half of Moldova's 3.6 million citizens were living in rural areas, where poverty rates were about 36 percent (2009). The traditional basis of Moldova's economy has been, and continues to be, agriculture. Remittances from migrants working abroad have become very important over time. At appraisal, it was recognized that Moldova needed to shift from a consumption-and-remittances-driven growth model to an economy with increased private savings and investments.

2. The country traditionally has a high literacy rate of close to 100 percent, and it can build on a strong tradition of science and technology education. However, low salaries and incentives have caused the quality of education and government services to deteriorate. Further, at appraisal, Moldova had a legacy of a vast bureaucracy that enjoys significant discretionary powers. Like in many other former Soviet Republics, external economic shocks coupled with an unfavorable economic environment and lack of political stability have further reduced the quality of governance and increased the opportunities for corruption.

ICT and Digital Development

3. At appraisal, it was recognized that information and communication technologies (ICT) can enable a transformation towards improving economic competitiveness and sustainable economic growth, building human capital, promoting social inclusion, and improving public sector governance. This was considered an opportunity for Moldova, where the high number of employees in public services did not compensate for excessive and redundant procedures that resulted in delays in the provision of services.

4. However, despite some advances in ICT, the Government had not re-engineered its service delivery. With few exceptions, citizens and businesses still had to obtain government services the traditional way: repeating again and again the process of waiting in line to obtain multiple documents from different sources to satisfy the requirements of a specific transaction. This way of interacting with the government cost people time and money, caused dissatisfaction, created opportunities for corruption, and increased costs for the Government itself. Per the UN EGovernment Survey 2010, the e-Government development in Moldova lagged behind many countries in the region (ranking 80th), after Belarus (64th), Ukraine (54th), Romania (47th), Latvia (37th) and Estonia (20th).

5. In 2010, access to mobile services was relatively high at 82 percent, but only 38 percent of the population used the Internet. Only 6 percent of the population were subscribed to fixed broadband services—which was lower than other countries in the region. To address this situation, the Government had already taken measures to improve access to the internet at lower costs, and subscription levels to these services were increasing.

6. Moldova's information technology (IT) sector faced significant constraints. The number of highly-skilled employable IT specialists was at the time of project appraisal – and continues to be today – relatively low compared to the existing demand. There was limited IT capacity across the Government. Low compensation of government employees diminished the Government's capacity to hire from the nation's limited pool of highly skilled IT professionals.

7. Missing by the time of appraisal was also an overarching strategic framework and common infrastructure for e-Government development. Each ministry and agency had its own data center. As a result, there were about 150 data centers of varying sizes throughout the public administration of Moldova—of which 60 percent were on a verge of data loss. This fragmentation of computing resources kept investment costs and operational costs high, created duplication, and necessitated the employment of more numerous and widely distributed IT staff.

Partner and Donor Environment

8. Other development partners – in particular UNDP and USAID – recognized the important role that the World Bank could play in taking the governance e-transformation agenda forward. UNDP had supported some pioneering efforts in developing the necessary policy and legal framework, training of civil servants, and piloting e-services through its e-Governance Project. USAID had supported a few e-services reforms of relevance for the private sector, such as e-tax declarations, through the Business Regulatory and Tax Administration Reform Project (BIZTAR). However, the agenda was by the time of project appraisal not prioritized by the development community and had not been addressed systematically. The World Bank's attention and leadership was therefore welcome.

Other World Bank Engagements

9. By the time of project appraisal, the World Bank was engaged in a few projects in Moldova that related to the Governance e-Transformation Project. These included: (a) Central Public Administration Reform Project— an effort to strengthen institutional capacity of the public administration for better policymaking, and implementation; (b) Public Financial Management Technical Assistance Project—to help the Government achieve effective and transparent management of public finances; (c) Competitiveness Enhancement Project—to improve the quality of investment climate, including, *inter alia,* the introduction of regulator impact assessment mechanism for new regulations affecting business operations; (d) Social Safety Net Project—to improve the efficiency and equity of Moldova's safety net and (e) Health Services and Social Assistance Project — aimed to increase access to quality and efficient health and improve the efficiency of social assistance services for the Moldovan population. The proposed project was planned to coordinate with these efforts and other related projects and initiatives as needed to assist the Government streamline processes, develop e-services, and open government data to its citizens and businesses. Close cooperation was sought with the Open Government Partnership.

1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)

10. The project development objective (PDO) was to transform delivery of selected public services using ICT. This objective was to be achieved by: (a) improving leadership capacity, enabling environment and management of ICT in the public sector; (b) using a modern service delivery platform to improve access to public services, and (c) increasing transparency in the public sector.

11. Three PDO Level Results Indicators were meant to give insights into the achievement of the overall objective.
    i. First, the projects measured the number of direct project beneficiaries, which was defined as the number of citizens that accessed public services implemented under the projects via the government portal and mobile phones. To keep an eye on the gender dimensions, the project was also to present this information disaggregated for women.
    ii. Second, the project measured the citizen perception of the quality of public services. This was defined as the degree of users' satisfaction with the overall quality of transactions processing for the main public service portal (www.servicii.gov.md) targeted by the project. User satisfaction was to be graded on a 1-6 scale with a satisfaction level of 5+6 considered as "satisfied" for the purpose of the project.
    iii. Third, the project was to measure uptake of e-government services by citizens. This was defined as the percentage of the population who assessed a government website at least once over the previous 12 months, as measured by a citizen survey.

12. In terms of intermediate results for subcomponent 1 ("e-Leadership Capacity and Enabling Environment ", i.e. a package of activities to improve the enabling environment for e-services and strengthen capacity to deliver these services, see next section), the project was to measure:
    i. the total number of people trained under the project;
    ii. public support for e-government solutions, defined as percentage of the population that would like to access public services through the internet or mobile phone, as measured by a citizen survey;
    iii. the number of (machine-readable) datasets available on the government website.

13. In terms of intermediate results for subcomponent 2 ("Shared Infrastructure and E-Services ", i.e. activities focused on building a comprehensive cloud solution and developing range of horizontal e-services, see next section), the project was to measure:
    i. uptake of shared e-government infrastructure (M-Cloud), measured as the percentage of central government agencies that have migrated one or more of their services/applications onto M-Cloud;
    ii. visits to government services portal, with the qualification that these should be "unique visits".

1.3 Revised PDO (as approved) and Key Indicators, and Reasons/Justification

14. Not applicable; PDO was not revised.

1.4 Main Beneficiaries

15. At appraisal, focus in terms of beneficiaries was mostly on the government-to-citizens (G2C) and government-to-businesses (G2B) dimensions. Direct beneficiaries were defined as being the citizens and businesses of the country, accessing public services via multiple channels, including government portals and mobile phones. The definition of these beneficiaries was undertaken against an existing, digital divide in Moldova, with a significant gap in internet usage between urban and rural populations, between different age groups, income groups, and a slight gender difference.

16. Project implementation also showed strong benefits in the government-to-government (G2G) and government-to-enterprise (G2E) dimensions, as beneficiaries included various government entities, as well as government officials and staff in public administration, which could undertake their work and offer government services in a more efficient manner, leading to higher satisfaction with the workplace.

1.5 Original Components

17. With a funding volume of $23.0 million (IDA financing $20.0 million, government counterpart financing $3.0 million), the project planned to implement some of the new and innovative approaches in e-Government, e.g., government cloud, government apps store, open data initiatives and government platform solutions. This would require infrastructure investments as well as legal and regulatory reforms, capacity building, and efforts to change the culture of public service delivery through training, strategic communication, and awareness-raising activities. The project was structured into two components and a few subcomponents, to group relevant activities together.

Component 1: e-Leadership Capacity and Enabling Environment ($8.0 million of which IDA financing was $7.0 million)

18. The main objective of this component was to improve the enabling environment needed to deliver government services in a better and more efficient way. This included institutional changes, policy and regulatory issues, training and capacity building, improvements in transparency, as well as strategic communications.

Subcomponent 1.1: Support for the e-Government Center and e-Leadership Development ($6.455 million)

19. *(a) Initial setup and operation of the e-Government Center (eGC):* The Government created the eGC in August of 2010, to be the entity in charge of the daily activities of the transformation, supporting the State Chancellery. The role of the eGC was to work with the ministries and agencies of the government to deliver their services online and to contract e-services design and implementation. The project was to initially finance operational costs and the core team of the eGC, including change management, project

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management and technical specialists to coordinate different aspects of the implementation of the e-transformation program.

20. *(b) e-Leaders, Civil Servants and IT Specialists Training Program:* This change management program was to deliver training and capacity building with a view to help change the mindsets of civil servants. It was comprised of three elements: (i) training the leaders (i.e., ministers, vice-ministers, department heads, agency managers and key staff) through leadership seminars, study visits, and twinning arrangements with countries that are leaders in e-transformation; (ii) training the civil servants involved in the provision of services in the participating agencies; (iii) technical training for (a) engineers; (b) IT specialists; (c) professors in universities with IT programs; and (d) IT developers in new technologies and processes introduced by this project, such as cloud computing and service oriented architecture.

21. *(c) Strategic Communications and Partnerships:* A transformation of this magnitude needed to be properly communicated to citizens and businesses, both to obtain their support and to alert them about new e-services becoming available. Therefore, the project was to finance (i) the development and implementation of a strategic communications program; (ii) the creation and management of strategic partnerships with local and foreign government agencies, donors, NGOs and other entities; (iii) the organization of knowledge-sharing seminars, workshops, conferences, innovation contests, and TechCamps.

Subcomponent 1.2: Developing an Enabling Environment, including Policy, Legal and Technical Frameworks and Programs ($1.545 million)

22. *(a) Policy and Strategic Framework for e-Transformation and ICT Competitiveness*, which included technical assistance on: e-Transformation Roadmap and Policy Development—to help define the government's e-Transformation vision, policies, strategies and programs; Global ICT Competitiveness Program Development—to help define a vision statement and roadmap, to identify opportunities and targets for the ICT-enabled enhancement of competitiveness of the Moldovan economy by 2020, and to identify opportunities to promote the local ICT industry.

23. *(b) Legal, Regulatory, and Technical Frameworks,* which included technical assistance on: the e-Transformation Legal and Regulatory Framework—to support drafting changes to legislation and regulations to enable the use of electronic services; the Technical Standards and Open Data Framework— which included (a) drafting Interoperability and e-Security standards for Moldova's e-Government, and (b) developing the open government data framework.

Component 2: Shared Infrastructure and E-Services ($15.0 million of which IDA financing is $13.0 million)

24. The main objective of this component was to create a common infrastructure and mechanism for rapid deployment of ICT-enabled public services. It was therefore to finance the acquisition of a shared computing infrastructure and development of the systems needed to deliver Government services electronically, as well as to invest in the digitization of public services.

<u>Subcomponent 2.1: M-Cloud: Shared e-Government Infrastructure ($6.0 million)</u>

25. The primary focus of this subcomponent was the phased establishment of a government cloud computing infrastructure (M-Cloud) to enable government agencies to deliver electronic services faster and more efficiently. M-Cloud was to be used by an increasing number of ministries and agencies of the government. The 'M' referred to the fact that the Cloud (a) would be located in Moldova; (b) would initially be a mini-cloud, starting small but gradually expanding to cover the growth in services; and (c) would incorporate a mobile delivery system, to enable people that do not have access to the Internet to get services through mobile phones.

26. Accordingly, the project was to finance (a) the preparation of technical specifications for M-Cloud infrastructure, including development of the business model to operate it; (b) the M-Cloud shared computing infrastructure, comprising core processing, storage, virtualization and service delivery platforms that include provision of Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). The component was also to cater for any power supply, air conditioning and other, needed auxiliary systems; (c) enhancements as needed to connectivity infrastructure for government departments that would initially use the M-Cloud to ensure efficient use.

<u>Subcomponent 2.2: e-Services Development ($9.0 million)</u>

27. This subcomponent was to finance the development of several e-services aimed at improving the interface between the government, citizens and businesses. Financing was to be used to fund (a) feasibility studies, including back office assessment; (b) limited process re-engineering; (c) preparation of technical specifications; (d) software development; (e) migration of existing systems to the Cloud computing platform if needed; (f) digitization of documents and archives for the provision of service as needed; (g) conversion of old systems to new software as needed; (h) upgrading of existing databases; (i) installation, testing and commissioning of the new software; j) digitization of documents. Two types of e-services were envisioned under the project: (a) e-Services for citizens and businesses; and (b) enabling services:

28. *(a) e-Services for Citizens and Businesses:* The Government would select up to five e-services for implementation annually, on the basis of criteria including: (a) low cost (under $200K) and short implementation timeframe (up to 12-18 months); (b) service should be government to citizen (G2C) or government to business (G2B), rather than government to government (G2G); (c) there should be existing minimal backend infrastructure; (d) there should be well defined and functioning business processes (e) urgency and relevance; (f) outreach; (g) existence of key enablers; (h) back office readiness; (i) level of complexity; (j) legal and regulatory framework; (k) leadership and political will; (l) user readiness, (m) sustainability, (n) external factors (EU compliance, support of other donors, etc.). The final selection was to be undertaken by the e-Transformation Council consisting of Ministers, private sector and NGOs and chaired by the Prime Minister. MoUs would be signed between participating ministries and the eGC outlining division of responsibilities, implementation approach, cost, and timeline for the implementation of the e-Services.

29. *(b) Enabling Services ("Enablers"):* A range of crosscutting enablers would be developed, including (a) a Government services portal; (b) an e-payment and billing system; (c) an e-authentication and identity management system allowing for digital signatures; (d) a government interoperability system; (e) an open government data portal; as well as (f) an SMS/email notification system; (g); an applications store/portal; and (h) a government document management system.

1.6 Revised Components

30. Not applicable; components were not revised.

1.7 Other significant changes

31. The project did not have any significant change in design, scope, scale, implementation arrangements, or schedule.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

32. <u>Ambition to Innovate</u>: At project entry, the ambition was to design and implement an innovative project that would reflect the World Bank's latest thinking in the use of innovative ICT solutions – cloud in particular – and respond to a client context which was suited to absorb and fully embrace cutting edge technology. This can still be understood easily when putting oneself back in the situation in 2010, when the project was developed. While the use of cloud technology has seen a major step forward globally over the last 1-2 years, it was quite exceptional in 2010, which shows the highly innovative character of the project and the ambition of the client and project team by the time.

33. <u>Learning from Earlier Experience, and Seeking Support from the World's Leading Experts:</u>
    - To prepare such an innovative project, attention was given to profit from the limited amount of earlier experience that was available. This included learning lessons from 12 World Bank-financed e-governance operations by the time under implementation or preparation, although not all of them employed as innovative technology as planned under this project, but sometimes rather covered more standard aspects of the e-government agenda. These projects had been or were implemented in Armenia, Bangladesh, Ethiopia, Ghana, Kenya, Morocco, Rwanda, Sri Lanka, Tunisia, Vietnam, and Eastern Caribbean.
    - The project was also meant to be one of the first beneficiaries of the World Bank's then new eTransform Knowledge Platform, a toolkit on the usage of ICT solutions to enable transformation of service delivery and accountability, which had been approved by the World Bank's Knowledge Council in January 2011.
    - Most importantly, lessons were also learned both at project design and repeatedly through project implementation through knowledge exchange with a group of leading government Chief Information Officers (CIOs) from the governments of Australia,

Canada, Estonia, India, Singapore, the United Kingdom, the United States, and the European Union, i.e. some of the world's leading experts on governance e-transformation. Advice sought included both recommendations on technical specifications, know-how on process, and support during some of the more difficult procurement activities.

34. <u>Dealing with Risks:</u>
   - One specific risk identified at project design stage related to the implementation modalities. As the intended cloud technology could only be successful if becoming a cross-cutting government tool, it was not-advisable that the initiative would be designed, owned, and implemented by a specific ministry or agency with little authority beyond its own portfolio. An earlier activity in the area of e-government (implemented by an UN Agency) had confirmed this assumption in practice and suggested to take a different path. In response, the project design anchored the project directly in the State Chancellery (i.e. the Prime Minister's Office) to guarantee commitment to the project at the right level. A dedicated project team (in form of the e-Government Centre (eGC)) would be set-up to run and implement the project on a daily basis, working closely with line ministries on the implementation of the different project components—specifically on the migration of their IT infrastructure to the M-Cloud and the development of e-Services. To this extent, the eGC identified focal points at each line ministry (e-Transformation Coordinators or Chief Information Officers, CIOs), established the inter-agency CIO Council that would serve as a technical coordination vehicle, and coordinated closely with the Center for Special Telecommunication (CTS), which would manage the cloud computing platform and operate the shared government IT systems. These arrangements proved generally the right ones for an ICT infrastructure that is to serve the government beyond any specific institution or ministry. However, these arrangements also meant new risks for the project as the project depended on support from the higher levels of the government that would change with new government terms of offices. Also, the set-up could bring up frictions between the eGC and line ministries. (Compare below, Section 2.2.: Implementation, and Chapter 4: Risk to Development Outcome).

35. <u>Financial Sustainability:</u>
   At project design stage, considerations were also undertaken on how to ensure the project's financial sustainability over the course of the project and beyond its lifecycle. It was envisaged that ministries and public agencies that would be benefiting from the new infrastructure, would share the savings derived from using the M-Cloud in a 60/40 split – wherein the eGC would likely receive around 40 percent (the exact savings sharing ratio would be determined at a later stage). Support of the project to the establishment of the eGC and its staff would be phased out over time. These plans to ensure financial sustainability were challenged in the later part of project implementation as it became clear that reaping the benefits of the new, joint ICT infrastructure would also necessitate phasing out some of the legacy infrastructure, fully re-engineering work flows in some ministries, likely adapting staffing levels, and deepening the reforms of SOEs. These aspects of a public-sector reform agenda went beyond the defined scope of this project, but were important to ensure financial sustainability of the hard and soft infrastructure put in place by this project. Some of the considerations on the project risks to development outcomes

(compare Chapter 4, below), as well as the design of the follow-on project (compare Section 2.5, below) take up these initial questions on project design and financial sustainability.

2.2 Implementation

<u>General Assessment</u>

36. Project implementation was overall straight-forward; no restructurings materially affecting the project or other significant project changes took place. Considerations affecting project rating at different stages related mostly to the pace of disbursement. The project fully disbursed its funds until project closure (USD 18.42M mentioned in the overview table above reflect exchange rate differences over time.)

<u>Assessment over the Course of Implementation</u>

37. The project started energetically. The E-Government Center (eGC) under the State Chancellery was created and became fully operational and staffed with a team of high caliber professionals, recognized as the leading institution by the rest of the government and by the private sector. CIO and CTO Councils and various working groups amongst the government were established. As a first move towards increased transparency and open government, the client launched an Open Government Data initiative. Strengthened e-government leadership and institutional capacity were built through international partnerships and knowledge exchanges with e-government leaders such as Singapore, Estonia, USA, Austria, Belgium, Korea, Finland and India.

38. The project then launched its major procurement activities, in particular the M-Cloud, which required to overcome some challenges. Procurements triggered a lot of attention from the private sector and became a testing case for the project when the process had to be protected against assertions from private sector stakeholders of alleged miss-procurement. The project team and the PIU were able to adhere to transparency and execute all procurements in a sound manner. In this process, the World Bank's procurement guidelines proved an asset to ensure a fair and non-discriminatory procurement process. In addition, an unexpected high uptake of Cloud Phase I resources triggered discussions on the right size and model of the Cloud II, resulting after some deliberations in the decision to procure a cloud with a larger capacity than initially proposed, and altering the cloud model to be used from a PPP model to a private government cloud model. Consequently, the procurement of the cloud component had to be restructured and re-issued. Other challenges during this time-period included efforts of the government to implement institutional reforms to recoup savings from line ministries for the use of the new ICT infrastructure. While the question on the overall government model for ICT budgeting and cost recovery was generally outside of the scope of the project, advancements on this agenda were important to ensure project sustainability. As the project went through these challenges, questions were also raised on the work of the eGC and its cost-effectiveness, which were clarified through a HR benchmarking study. All in all, working through these challenges led to project delays of about one year in particular around the year 2014, and therefore the rating for Implementation Progress (IP) was downgraded from moderately satisfactory to moderately unsatisfactory for three

consecutive ISR cycles. Once the contract for the Cloud II had been signed, disbursement accelerated and the IP rating was upgraded to moderately satisfactory for one ISR cycle, and from the second half of 2015 onwards back to satisfactory for all remaining ISR cycles.

39. In a middle phase, a lot of attention focused on the expansion of e-services, such as the e-Criminal Record and the G2C portal. Two enabling platforms were being developed using a PPP approach, i.e. the electronic mobile ID and electronic payment gateway M-Pay. The Open Data Initiative – initiated at project beginning – continued to evolve dynamically. A long list of policy and legal advancements helped to improve the enabling environment for e-government transformation.

40. With major procurements in place and first e-Services in operation, the project began to turn into a success story. Many government services were migrated to the M-Cloud and experience with the operation of the cloud increased. The growing number of e-services available required increased management of the platforms, as well as further expansion of the work in areas such as interoperability and enabling platforms. The eGC had developed into a mature player in the meanwhile, with solid and tested management and project operation functions.

41. A last phase of the project touched the agenda beyond the initial project development objectives (which had been achieved already). As many government bodies were in the meanwhile profiting from the technology that had become available, more considerations focused on how to deal with incumbent platforms, and how to reap the benefits of the technologies for deeper rooted government reforms, and – again – how to share the costs and benefits of the new technologies amongst the different government bodies. Many of these questions led to the suggestion for a follow-up project, which would address some of these questions in more detail.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

42. Overview
   - The project defined three PDO Level Results Indicators, being (i) the number of direct project beneficiaries; (ii) citizen perception of the quality of public services; and (iii) the uptake of e-government services by citizens, which were in their entirety meant to give an overall picture about the share of the population reached with the project, the degree of satisfaction of the people with the new services, and the degree of usage of these services.
   - The more granular intermediate results indicators counted for component 1 (soft infrastructure such as policies and capacities) (i) the total number of people trained under the project; (ii) public support for e-government solutions (as per a survey); and (iii) the number of (machine-readable) datasets available on the government website.
   - The more granular intermediate results indicators counted for component 2 (hard infrastructure such as Cloud and e-Services) (i) the uptake of shared e-government infrastructure (M-Cloud) by central government agencies; (ii) unique visits to government services portal.

43. Assessment
   - The design of this M&E framework proved useful. The M&E framework could capture the essence of the project results across all activities and components. The PIU (in form of the eGC) diligently worked with the M&E framework and persistently captured and provided the necessary information in due form and in due time. This included the elements that required a citizen survey, a task that was outsourced to a specialized firm.
   - Since the project proceeded to define indicators by components and subcomponents which have a mutually reinforcing character, small overlap and interaction between different indicators may be noted, such as on statistics of usage of e-services and webpages, as well as citizen perceptions. One option might also have been the introduction of an intermediate indicator of demand. Instead, the project used perception surveys to shed some light on citizens' needs.
   - The project team was clear at project development stage that innovative technology would also allow for innovative approaches in M&E. It indicated (in the PAD) that data collection would be automated wherever possible, and monitoring would be embedded in applications.

44. Additional M&E Reporting
   - The eGC performed strongly in making this suggestion a reality and engaging in cutting-edge, automated collection of M&E data. The output of this work was a monthly uptake barometer which provided detailed and factual statistics on all dimensions of the e-services usage developed under this project. The information provided by the barometer through its 25 slides of graphs and diagrams provide strong evidence of the success of the various aspects of the project. At the same time, they constitute an example to follow for future World Bank projects in terms of using ICT-based M&E frameworks. (Compare Supporting Document 1).

2.4 Safeguard and Fiduciary Compliance

45. The project did not trigger any safeguards.

46. In terms of fiduciary compliance, satisfactory financial management arrangements and adequate compliance with the project financial management covenants was observed throughout the project lifecycle. A comprehensive accounting system enabling the project team to keep a close eye on cash flows was relied upon. The quarterly interim financial management reports following the agreed format were submitted in timely fashion. There were no outstanding audit reports at the end of the project and audit reports were found acceptable to the Bank at all times. Each project audit reported "unqualified", and no major systems and control issues were identified by the auditors during the work. The change in accounting staff during project implementation did not affect the project's financial management function. The Government's transfers as part of their co-financing contribution to the project were made at the appropriate times, with few exceptions in case of delays in the adoption of the Annual State Budget.

2.5 Post-completion Operation/Next Phase

47. Next Phase Program

- The Government of Moldova and the World Bank are planning a follow-on project, in form of a Bank-financed public sector management project titled "Modernization of Government Services Project (MGSP)".
- While the first phase of the Government e-Transformation project was focused on putting in place the core ICT infrastructure (both hard infrastructure in form of a Cloud and a range of e-services, and soft infrastructure in terms of capacity and enabling frameworks), the second phase will focus on deeper institutional reforms in public sector governance as made possible through the now existing ICT infrastructure. The second phase will build on the achievements of the first phase by further expanding the use of the Cloud technology, leveraging developed e-Services (both enablers and topic-specific), and building on first experiences gained in the re-engineering of public sector service delivery as made possible using ICT technology. It will advance deeper, institutional reforms through a more comprehensive re-engineering of internal workflows in the public administration based on the use of digital technologies and the offering of e-services, engage in a review of staffing implications as resulting in the use of more efficient ICT technology, and take this as a starting point to also review a range of more general public sector reform management and coordination activities.
- Phase 2 will include the following components:
  Component I – Administrative service modernization: Business process re-engineering; Reform management and coordination; Expanding access points for central government services.
  Component II – Digital Platforms and Services: Digitization of services that went through business process re-engineering; Strengthening e-services infrastructure; Standardization of IT Management; Cybersecurity and privacy.
  Component III - Service delivery model implementation: Staffing review; Capacity building/training - for process re-designing and innovation; Strategic staff planning and job descriptions for new service delivery.
  Component IV – Project Management: Cooperation for improved services delivery; Citizen outreach for modernized services.
- The preparation of a follow-on project underlines the relevance and success of the first phase of the project. The next project fully builds on the existing achievements, helps insure their sustainability, and will deepen institutional reforms by seamlessly taking the reform agenda up where the first project touched its limits: deeper governance and public sector management reforms that become possible based on the use of advanced ICT infrastructure.
- The lead of the next phase program will shift from the ICT team (part of the Transport and ICT Global Practice) to the Governance Global Practice. The ICT team will remain involved through a Co-Task Team Leader arrangement. This arrangement reflects intra-institutional collaboration between different World Bank teams, offering cutting-edge solutions to World Bank clients.

48. Other programs to leverage the infrastructure build under the project: Beyond the direct follow-on project, the World Bank will continue to assist the Government of Moldova in different aspects of governance reforms. Projects will leverage the infrastructure and services build by this project, including through the Tax Administration Modernization Project (P127734) and the Land Registration, Valuation and Local Taxation Project (P161238).

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

49. Relevance is assessed as *high*.

50. Relevance of objectives is *high*: The project contributes to many of today's pertinent development goals of Moldova. These goals were mostly already identified at the beginning of the project and have further gained in importance over the last years. The following describes some of these specific Moldovan development objectives in more detail:

    - Good governance / anti-corruption: Public sector governance and anti-corruption measures have become an increasingly urgent development priority in Moldova, where significant governance problems persist causing mistrust amongst citizens, businesses, and public sector authorities, as well as possible loss of public revenues. "Justice and Fight against Corruption" is one of Moldova's seven national development objectives (Moldova National Development Strategy (NDS) 2020, p.59), and equally prominently highlighted in the Bank's Country Partnership Strategy (CPS 2014-17, p.8, para 22ff.). The Governance eTransformation Project has fostered transparency and helped close doors for bad governance practices, both through its various e-services offerings (which submit workflows and cash flows to the controlling framework of digital technologies), as well as through dedicated open data initiatives. Refer in particular to the project's Intermediate Outcome Indicators 2.1. (Uptake of Shared eGov Infrastructure M-Cloud) and 1.1. (3) (Datasets Available on OGD Website).

    - Efficiency in public administration: As a legacy from socialist times, and as a sign of persistent low opportunities for the private sector today, a large state bureaucracy persists in Moldova. The Bank's CPS highlights the progress still to be made in building the capacity of the public sector to perform better (p.8, para 23, ff.). The ICT solutions implemented through this project helped increase efficiency in public administration, speeding up processes and procedures amongst government bodies and with citizens and businesses. Refer in particular to all three PDO indicators (Direct Project Beneficiaries, Citizen Perception of Quality of Public Service, Citizen Update of e-Government), as well as to the Intermediate Outcome Indicator 2.2. (Visits to Government Service Portal).

    - Private sector development and innovation: Moldova has excellent opportunities to use ICT technology as a driver for innovation. Building on high education levels of the population, good prospects exist to complement the agricultural strength of the country and opportunities in the public sector with ICT based private sector driven initiatives. "Business Environment" is one of Moldova's seven national development objectives (Moldova NDS 2020, p. 33 ff.) and the World Bank's CPS highlights ICT as a promising aspect of private sector opportunity (p. 9, box 2). The project has constituted a flagship to mobilizing the digital agenda and evidencing the private sector innovation potential in Moldova. Many countries in the region now look at Moldova and its ICT infrastructure as an example to follow. Note that many of the staff members of the project team were recruited from the private sector; that private sector services were needed to develop many of the project's e-Services; that some of the e-Services can be used by the private sector as well (such as M-Pay); and that

there was high interest from the private sector in the procurements the project undertook, including from companies from the region.

- Migration and remittances: Moldova is witnessing a decline in its population and reliance on remittances is strong. The country therefore has a strategic interest to keep up good relations with its diaspora of well-educated and highly trained citizens, as these can temporality help alleviate economic challenges and may in the medium term return to their home country. The project has made a difference in allowing Moldovans living abroad to stay connected with their home country, by allowing to carry out important administrative acts online. For example, the significant number of criminal records issued in Moldova every year is explained by the fact that these documents are mostly needed by migrants as part of an application for a work permit abroad. Demand for the relevant eService introduced by the project in 2012 is strong, with an uptake rate at close to 100% in 2016 (Annex 1, Update Barometer, slides 1, 2).

- Rural agenda: As a country with a considerable rural population and a strong economic base in agriculture, Moldova has a strategic interest in serving those of its citizens and businesses that live in rural areas less well connected to the capital. Increased used of digital technology (building on increasing levels of internet access and digitization) are of great value to connect rural areas to the service delivery of the state and help reinforce overall cohesion of the country. All e-services developed by the project (see long list in Annex 2) make an important contribution to serving Moldovan citizens, in particular those with long travel times to governments offices.

51. Relevance for design and implementation is *high*: The design, structuring of the project and its results framework were relevant and suitable to achieve relevant outcomes:

- Improving Leadership Capacity: The project financed the launch and (at least initially) operation of a dedicated government entity (the eGC), which equipped the project with the necessary leadership. In terms of a broader institutional and leadership capacity building, a comprehensive training program was implemented, in particular for key government officials. The results framework captures the matter through an intermediate outcome indicator (For details, see Annex 2).

- Enabling Environment and Management of ICT in the Public Sector: The project included a dedicated component dealing specifically with matters of the enabling environment, in particular policy and regulatory frameworks. The project contributed to over 40 policy, legal and technical documents and government decisions (Compare below, section 3.2.).

- Using a modern service delivery platform to improve access to public services: The project's main infrastructure components focused on building the modern service platform to improve access to public services. Several indicators of the results framework captured this important infrastructure dimension of the project.

- Increasing transparency in the public sector: The project had a dedicated work program on Open Data and Governance, which was also reflected in the results framework, which included a dedicated indicator on the number of public datasets having been made publicly available. The work of the project on Open Data and Governance received an international award (Compare below, 3.2.).

3.2 Achievement of Project Development Objectives

52. Efficacy / achievement of project development objectives is assessed as *high*.

53. The project has achieved excellent outcomes, exceeding all its PDOs and Intermediate Outcome Indicators. In terms of PDOs, (i) the project reached over 630,000 direct beneficiaries (target: 300,000); (ii) 66 percent of citizens are satisfied with the quality of e-services (target: 60%); and (iii) 44 percent of citizens use e-services (target: 25%). In terms of Intermediate Outcome Indicators, (i) more than 2600 people were trained under the project (target: 2000); (ii) public support for e-Government reached 73% (target: 70%); (iii) over 900 datasets were made available publicly (target: 600); (iv) uptake of e-services and digital platforms by the government reached 54 percent (target: 25 percent); and (v) the government portal has been visited by nearly 1.1 million visitors (target: 400,000). The results of the recent independent GeT survey reveals a substantial growth of buy-in and support for the governance e-transformation agenda and recognition of advantages of online service delivery among the citizens over the past three years (Supporting Document 2, annexed). The detailed, monthly update barometer (Supporting Document 1, annexed) shows the strong results in more detail.

54. The outcomes of the project are based on a longlist of project outputs in the form of substantial foundations across all project components.
    * Under Component 1 (soft infrastructure), the project helped build (and initially finance) the eGC, which drove the reform agenda forward and ensured that relevant reform counterparts across different sectoral ministries were engaged. Training activities carried out by the project were comprehensive and reached the right target groups. Outreach and partnership activities positioned the project in the heart of the digital agenda in Moldova, giving it a lead role and allowing for a range of positive side benefits in terms of institutional strengthening and innovation capacity. The project helped initiate, design, and implement a long list of over 40 policy, legal and technical frameworks and government decisions. The achievement of the project in Open Data and Governance was internationally recognized through an award received from the Open Government Partnership, Transparency International Ukraine, and the British Embassy in Kiev.
    * Under Component 2 (hard infrastructure), the project helped finance and put in place the M-Cloud as a shared computing infrastructure, comprising core processing, storage, virtualization and service delivery platforms, as well as auxiliary systems such as power supply, air conditioning, etc. More than 115 systems of 36 ministries are now hosted on the M-Cloud. In terms of e-services, the project developed and made available a long list of services, including crucial enablers such as a general government portal, a digital payment platform, a digital signature, and a general interoperability platform. Uptake of e-services as evidenced in the barometer is strong across all services (Supporting Document 1, annexed). The Cloud platform won an international industry prize as "Best Cloud Project in Central & Eastern Europe", in 2012.

55. The causal relationship between the project interventions and the outcomes is overall strong.

- Project interventions on hard infrastructure (Component 2) can be directly linked to the noted outcomes. Usage of the cloud infrastructure is a natural result of the installment of this infrastructure through the project. Level of client satisfaction with the e-government services naturally relate to the advancements the project has made, as the project made these e-services available.
- Project interventions on soft infrastructure (Component 1) can slightly less easily be linked to outcomes. Changes in awareness and perceptions may have resulted from different influences, but it can safely be assumed that training, awareness raising, and support for policy and regulatory reforms made a positive contribution to the project outcomes. Seeing that these legal frameworks underpin the infrastructure and were necessary to allow for the creation and enactment of relevant e-services, the active role of the project to help shape them and put them in place has been necessary.

3.3 Efficiency

56. Efficiency is assessed as *substantial*.

57. The analysis of economic and financial efficiency showed positive results, generally confirming the predictions made at project development stage. The analysis points to net present value savings of around $3.8million per annum ($38million over 10 years) for M-Cloud; cost savings of $70.000 per annum ($7million over 10 years) for M-Connect; and $2.6million per annum ($26million over a 10 years) for M-Pay. In total, according to the analysis, the net present value achieved by the key infrastructure and services installations therefore amount to $7.1m per annum, which would mean an amortization of the $20m project costs in less than 3 years. This is in line with the estimates made at appraisal stage.

58. To capture the essence of the project, the assessment focused on the main aspects of the improved ICT environment which were also the parts of the project which consumed the most important amounts of the funds, i.e. the M-Cloud as the main piece of the infrastructure, M-Connect as the central pieces of interoperability of the new government e-architecture, and M-Pay, the main horizontal enabler supporting all government e-services with the option to carry out payments online. As the focus was on the key components of the project, and does not yet include a range of other benefits, the assessment can be considered conservative.

3.4 Justification of Overall Outcome Rating

59. Rating: *highly satisfactory*

60. The project is of *high relevance* to help tackle an important part of the specific development challenges Moldova faces. These challenges were partially identified at project appraisal already and continue to be of high relevance or have even aggravated over time. The development challenges and solutions to tackle them are clearly pointed out both in the World Bank Country Partnership Strategy and Moldova's National Development Strategy 2020 and its ICT Strategy "Digital Moldova". The specific contribution this project has made to support an improvement of the situation can be pinpointed across its range of activities under both project components. The structuring

of the project, its components and its results frameworks were suitable to guide project implementation towards addressing the noted development challenges.

61. Achievement of project development objectives is assessed as *high*, as the project has comprehensively delivered both in terms of outputs and outcomes, evidenced by an overachievement of all PDOs and Intermediate Outcome Indicators. The list of project outputs is substantial across all components (hard infrastructure installed, e-Services developed, policy and legal documents developed, training carried out). (Please refer to Annex 2, below).

62. The degree of project efficiency is assessed as substantial. The review has taken a conservative approach by looking at the main project activities / main project investments. The assessment points to a return of project costs within around 3 years.

63. For these reasons, overall project rating is *highly satisfactory*.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

64. Poverty Impacts: While no scientific impact analysis on poverty impacts of this project was carried out as part of this ICR review, the potential of ICTs to leapfrog development, bridge digital and analog divides, and accelerate human progress is generally widely recognized and articulated in the World Development Report 2016 "Digital Dividends". Positive impacts on poverty reduction can in particular be expected when ICTs are made available in an inclusive manner and accompanied with a strengthening of the analogue foundations for the digital economy.[1] The project design was informed by these needs and designed to reach the citizens in an inclusive manner. The project reached the target groups it had defined and achieved all its PDOs.

65. Gender Aspects: The project committed to track women participation as part of its M&E framework, to understand the gender dynamics in the e-transformation agenda and take corrective action where necessary. Results showed that women constituted around half of the project beneficiaries through-out the project. This is in line with stocktaking and anecdotal evidence gathered during the ICR review, which confirmed that women and men in Moldova are equally interested and open to using ICT technology and e-government services.

(b) Institutional Change / Strengthening

66. Developing, procuring, and implementing a state-of-the art government cloud infrastructure and a large range of government e-Service had an important learning effect for stakeholders in Moldova engaged in this process. This included learning about latest

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[1] Compare the World Bank's World Development Report 2016, "Digital Dividends", dedicated to the topic.

technological standards, and operation and management of the cloud infrastructure and the e-Services. Gaining increased familiarity with the World Bank's procurement systems also contributed to institutional learning and capacity development.

67. Stakeholder interviews carried out for this ICR also confirmed that the project had a positive impact on government-citizen relations, as citizens are content that they can access government services at less time, costs, and effort – particularly when living outside the direct vicinity of public administration offices. This demonstrates a new service culture in parts of the public administration, which can be considered an element of institutional strengthening in a context such as in Moldova, where trust and cohesion between different societal groups and the government can improve.

(c) Other Unintended Outcomes and Impacts (positive or negative)

68. One of the e-services digitized during the project was Personal Asset Disclosure. This initiative was implemented in collaboration with the Finance and Markets GP that led the initiative aimed at ensuring personal asset disclosure by government officials. In the past all personal asset disclosure forms were completed and stored in a paper format, making them inaccessible. The introduction of an electronic system was necessary to make the process of disclosure a de facto functional requirement. The digitization of the system was backed by changes in a legal and regulatory environment allowing for electronic storage of disclosure documentation. Completion of this initiative became a major step in anti-corruption in Moldova.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

69. Beneficiary surveys were regularly carried out to respond to data collection needs for the M&E framework. For the latest, full report, see Supporting Document 3: Perception Survey, as annexed. The following highlights a few main findings from this survey:
   - 73% of the citizens in Moldova consider governance e-transformation reforms as highly important (5-6 on a 1-6 scale, in 2016, as compared to 29% in 2012);
   - 76% of citizens consider that e-Governance has advantages (from average to highly important advantages for citizens, in 2016, as compared to 49% in 2012);
   - The level of citizens' support for the governance e-transformation reform agenda increased to 77% in 2016 (from 43% in 2010);
   - More than 24% of citizens in 2016 accessed at least one e-service provided (compared to 4% in 2011). The amount of 62% of these e-services consumers were accessed from computers, whereas 31% were assessed from a mobile phone (compared to 3% in 2012).

70. Note that further to the beneficiary impressions collected through the survey, a concluding stakeholder workshop was carried out at project closure in December 2016, which confirmed the findings of the surveys.

4. Assessment of Risk to Development Outcome

71. Rating: *Moderate*.

72. The risk, at the time of evaluation, that development outcomes will not be maintained, is overall moderate.

Factors that point to low risks

73. <u>From a technical / practical perspective</u>, the M-Cloud that has been built and the e-services that have been developed and linked to it are in full operation. Citizens, businesses, and large parts of the government are relying on these technologies and services daily. Shutting these critical pieces of infrastructure down or putting them out of operation in any other way seems close to impossible, as it would turn considerable parts of the government service provision and inter-agency cooperation non-operational.

74. <u>From a financial / budgetary perspective</u>, the project achievements put Moldova overall in a more favorable situation than before the project. It is therefore not to be expected that the project achievements would be put in question for general financial reasons.

75. <u>From a social perspective</u>, support for the project achievements is very high. To give a concrete example, no citizen would reasonable want to go back to a system where he/she needs to queue in line for a long time to submit a document to an office of public administration, when such act can also be performed online in a few minutes. The citizen surveys showed good levels of citizen satisfaction with the delivery of electronic services over time.

76. <u>From an institutional perspective</u>, the overall commitment from various governmental bodies to the M-Cloud and its related infrastructure and services is strong. The project has had a positive impact on those government institutions that did not have any ICT systems in place at all or moved from older datacenters into the new ICT environment. Some stakeholders that handle critical data – such as the tax office – are still reliant on their own legacy systems and have not yet decided if they would like to persist using these systems. The question if eventually all government datacenters will move into the M-Cloud, or if some separate systems will persist, does not question the project results, as these results are strong enough and have received sufficient support from a large range of Ministries and other public sector stakeholders.

77. <u>From a perspective of natural disasters and other extreme risk situations</u>, it must be noted that no ICT infrastructure can be 100% protected against cyberattacks and cybercrime. These risks are generally inherent in any ICT technology and can be mitigated using latest technology and implementing updates of software and protection mechanisms. A backup M-Cloud II was introduced under the project ensuring business continuity if M-Cloud I is affected by natural disasters or other extreme risk situations.

Factors that point to moderate risks

78. <u>From a perspective of government ownership/commitment</u>, an overtime increasing government ownership can be noted, although some risks remain.

- First, the initial project design included a clear sustainability strategy, which entailed the gradual phasing out of the World Bank's support for core staff salaries and operating costs at the eGC from 100% down to 40%, starting in 2014. This phasing out was generally successful. However, negotiations between the Bank and the Borrower about the follow-on project concluded in an agreement which entails a Project Preparation Grant and an ongoing, partial support of the Bank for the eGC during the next phase. This means that the eGC and m-Cloud remain dependent on Bank funding for the next years.
- Secondly, there is a set of questions to be considered around the costs and benefits of the new ICT infrastructure. At project design stage, reference was made to a draft e-Transformation Policy of the government, which envisaged that ministries and public agencies that would be benefiting from the new infrastructure, would share the savings derived from using the M-Cloud in a 60/40 split – wherein the eGC would likely receive around 40 percent (the exact savings sharing ratio would be determined at a later stage). These plans of the government have advanced somewhat slower than expected as they proved of a more complex nature. Reaping some of the cost benefits will require phasing out legacy infrastructure, fully re-engineering work flows in some ministries, and likely adapting staffing levels accordingly. Reaping the benefits also points to reform needs of SOEs, which currently carry out for profit and non-for profit public administration aspects (such as *Registru*, and *FiscServInform*), which will need to be taken into consideration when discussing costs and benefits of jointly used government ICT infrastructure. As these questions could not be clarified during the project, competition for resources between the eGC and the line ministries persist, and eGC's cost-recovery mechanism remains unclear. Considering this situation, and to confirm the sustainability of the results of the Governance e-Transformation Project (in particular the ICT infrastructure financed with it), the Government has in late 2016 through Government Decision 128/2016 committed to the further operation of the M-Cloud and the e-services, based on the state budget. The lack of clear and sustainable solutions on inter-institutional cost/benefit sharing of the joint ICT infrastructure between different governmental bodies leaves an open agenda item that the follow-on project will need to address.
- Government changes in Moldova have affected the operation of the project in the past and meant a need at times for advocacy from the Country Manager, and they will influence the way the M-Cloud is operated, and eGC works, in the future. In these deliberations, the Bank has supported the idea of an apolitical staffing of eGC and its continued operation as an independent agency.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

79. Rating: *Highly Satisfactory*

80. The Bank took at project entry a visionary approach to take its service and knowledge offer to a new level, and develop together with the client a new intervention that would leverage the latest technology and make a strong difference for the client. The pace of development of digital technologies is fast, and the vision to develop a Cloud project in Moldova in the year 2010 was instrumental to the operation of a state-of-the art cloud infrastructure in Moldova, today.

81. The relevance of the project as designed was clearly targeting specific development challenges of Moldova: Through modern ICT infrastructure and service delivery it would help close doors for corruption in the public sector through digital systems, improve the efficiency of the public sector (a legacy from socialist times) through e-services; bridge disconnects between the urban and rural population through online service offerings; and serve the large and growing diaspora of Moldovans supporting the country through remittances by allowing them to stay connected and receive government services over a distance.

82. In terms of M&E, the Bank team designed a solid PDO logframe which proved helpful and valid across the project. It left room for the use of digitally driven indicators. The project team took up this proposition during implementation, developing a more granular, monthly barometer.

83. From a budget perspective, an achievement consisted in the imbedding of TF resources (made available by the Netherlands), which allowed the project to kick-start its activities and overall expanded the reach of the project.

(b) Quality of Supervision

84. Rating: *Highly Satisfactory*

85. The quality of Bank supervision consisted overall in very efficient hand-holding with the client, and strategic support at key moments of the project. Overall, this helped ensure on a daily basis the strong outcomes and outputs that were delivered.

86. The Bank team played a strong role during the challenging times of the project, when seamless cooperation of fiduciary, procurement, and operational teams were needed to assist the PIU to undertake the procurement in a transparent manner fully in line with the World Bank procurement rules and fiduciary principles.

87. The Bank team ensured overall pace of delivery and disbursement. Despite some concerns on disbursement levels at the beginning of the project, the project was never on the ECA list of slow disbursing projects.

88. The Bank team showed candor in its performance reporting, clearly flagging success and challenges, and taking a humble approach in terms of ratings.

89. The Bank team connected the project with leading, international e-Government expert which was crucial to define the right parameters for the new ICT architecture, providing

strong support and reassurance to the PIU along some of the major procurement activities.

(c) Justification of Rating for Overall Bank Performance

90. Rating: *Highly Satisfactory*

91. Overall, services provided by the Bank ensured high quality at entry of the operation and very effectively supported implementation through appropriate supervision toward the achievement of development outcomes.

92. In an overall perspective, the Bank played its defined role as a funding and knowledge partner very well, assisting where needed and giving the client the space it required to lead the project to success.

5.2 Borrower Performance

(a) Government Performance

93. Rating: *Satisfactory*

94. The borrower (including the government and implementing agency or agencies) overall ensured quality of preparation and implementation, and complied with all covenants and agreements, toward the achievement of development outcomes. During the times when the project's main infrastructure procurements created challenges and implementation delays for the project, the borrower displayed caution and worked closely with the Bank to eventually lead these procurements to success.

95. The borrower showed strong initiative in pursuing improvements in the enabling environment necessary to make the project activities a success. This includes a long list of policy and regulatory activities that were implemented.

96. While fully committed to the development objectives of the project, resolving competing agendas between line ministries, SOEs, and the eGC would have further strengthened the reform agenda and further reduced the risks to development objectives as it would have put the eGC and the infrastructure it administers on a clearer medium-term financial and institutional path (see above Chapter 4).

97. Monitoring and Evaluation arrangements, implementation arrangements, and donor/stakeholder relationships were mostly led by the implementing agency.

(b) Implementing Agency or Agencies Performance

98. Rating: *Highly Satisfactory*

99. The performance of the implementing agency (in this case the eGC and the PIU embedded in there) must be described as exceptional. The eGC took on a real leadership role, had a strategic vision and was able to translate the vision into reality; effectively

developed, implemented and put into operation a large range of e-services; with support of the Bank successfully completed necessary procurements; performed an outstanding job on M&E and project results tracking; played a successful role in liaising with various governmental bodies to create a reform constituency within the public administration, and was effective in the day-to-day management of the project activities. The work of the team in the eGC / the PIU was instrumental to the overall project success, making the eGC the nucleus of the government reform process. Implementing Agency performance is therefore highly satisfactory.

(c) Justification of Rating for Overall Borrower Performance

100.   Rating: *Satisfactory*

101.   The success of the project can to a large extent be attributed to the energetic work of the borrower's implementing agency, and the support of the borrower to the implementing agency in terms of staffing and back-up, as well as the implementation of measures to improve the enabling environment. Overall, borrower performance was therefore strong, with minor limitations in terms of support to ensure the continuity of the results achieved.

6. Lessons Learned

General

102.   Leveraging ICT: Digital technologies are revolutionizing the world and they are offering unprecedented development opportunities for low and middle income countries. These countries are therefore well advised to put in place backbone infrastructure building internet connectivity, cloud systems, and complementary support infrastructure such as suitable cyber-resilience systems. On this basis, the benefits of digital technologies across all sectors of development are in reach. The Moldova E-Governance Transformation project – developed six years ago when the agenda was still far more nascent then today – is an exemplary case for what can be achieved particularly in one area: the transformation of government service delivery through cutting edge ICT solutions. For the Bank, it is a call to continue expanding its use of ICT and digital technologies for development leaps beyond business as usual.

103.   International recognition for project achievements: Moldova's achievements made through this project have been recognized internationally. The cloud infrastructure won an international prize as "Best Cloud Project in Central & Eastern Europe" in 2012, and the achievements in Open Data and governance were recognized through an award received from the Open Government Partnership, Transparency International Ukraine, and the British Embassy in Kiev. Achievements also make it an example to follow for other low and middle to consider, evidenced by a large amount of study visits from countries such as Belarus and Kyrgyzstan which are keen to follow the Moldovan and Estonian experience and have started to develop similar project.

Project Specific

104. <u>Finding the right implementation arrangements and being cognizant of the overall political economy that will foster or hinder success</u>: It was instrumental to the success of the project to establish effective institutional arrangements from the beginning. Anchoring the project directly at the highest level of the government, i.e. the State Chancellery and engaging the Prime Minister's office for key decisions (such as the selection of e-services to be digitized) made sure that the project profited from the necessary attention and guidance it required to be of general relevance to all ministries and administrative bodies. While different ministries and agencies profited more than others from the project as the project build and expanded its scope over time, it was important to establish the lead of the project not within one specific ministry, which would have made it difficult to ensure general relevance for the country across the government and different topic areas. At the same time, the project also highlighted that the installation of shared government ICT infrastructure (such as a Cloud system) presents a need to ensure smooth cooperation between different line ministries and government administrative bodies. A clear cost/benefit sharing model between the institutions can help in clarifying the cost-recovery mechanism for the new infrastructure, as well as benefits from cost savings and phasing out of legacy infrastructure. Such mechanisms can help in changing the business model of government, and they will reduce implementation risks when the reform champion (which may be at the head of the government) leaves his/her position. In implementing similar projects, the need for the Bank to closely monitor the situation is important.

105. <u>Overcoming challenges with large procurement activities</u>: The project was challenged in an early/ middle phase (2013-2015) when its large procurement activities had to be implemented. The eventual success was achieved through seamless cooperation of fiduciary, procurement, and operational teams, along with the PIU, and serves as a reminder for how important such smooth cooperation is for all procurements and overall project success.

106. <u>Injecting private sector dynamics</u>: It was crucial for the success of the project to create a central unit for project implementation (the eGC and the PIU imbedded in it) recruited largely from the private sector, even if this meant somewhat higher costs for staff. The entrepreneurial mindset of the eGC, the work spirit and energy to deliver, and the close relations to the private sector were instrumental to achieving the desired results. The project was at entry stage an ambitious suggestion to deliver and it required an entrepreneurial team to lead it to success.

107. <u>Relying on cutting edge international expertise</u>: The project team reached out to some of the leading international experts, from countries that lead the e-Government agenda. Recommendations received were instrumental in defining the technical design and offering overall direction.

108. <u>Keeping the project design simple and focusing on M&E</u>: The project profited from the fact that the project design was not too complicated from the outset, and from the fact that the project team did not alter the scope or level of ambition in light of the success that was progressively achieved. Clear targets, strong performance on tracking outcomes and results, and avoidance of additional administrative efforts contributed to keeping this project on track. Additional matters that came up during the project, outside of and beyond the project targets, may be tackled in the planned follow-up project.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

109.   The letter received by the borrower in response to the ICR is included below (Annex 7). There are no comments on the issues raised by the borrower.

(b) Cofinanciers

110.   Not applicable.

(c) Other partners and stakeholders

111.   Not applicable.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Project Components		Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Component 1	**e-Leadership Capacity and Enabling Environment**	**$8,00**	**$5,102**	**63,78%**
1.1	Support for the e-Government Center and e-Leadership Development	**$6,455**	**$4,666**	**72,29%**
1.1.1	*The initial setup and operation of the e-Government Center*	$4,235	$ 3,810	89,96%
1.1.2	*e-Leaders and Civil Servants Training*	$1,520	$0,295	19,41%
1.1.3	*Communications and Partnerships*	$0,700	$ 0,561	80,14%
1.2	Developing Enabling Environment, including Policy, Legal and Technical Frameworks and Programs	**$1,545**	**$0,436**	**28,22%**
1.2.1	Develop Policy and Strategic Frameworks	$1,190	$0,160	13,45%
1.2.2	Develop the legal, regulatory, technical and Open Data Frameworks	$0,355	$0,276	77,75%
Component 2	**Shared Infrastructure and e-Services**	**$15,000**	**$16,540**	**110,27%**
2.1	M-Cloud shared e-Government infrastructure	**$6,000**	**$9,161**	**152,68%**
2.1.1	M-Cloud Phase 1	$1,550	$2,519	162,52%
2.1.2	M-Cloud Phase 2	$4,450	$6,642	149,26%
2.2	e-Services Development	**$9,000**	**$7,379**	**81,99%**
2.2.1	e-Services	$7,000	$5,184	74,06%
2.2.2	Enabling services ("enablers")	$2,000	$2,195	109,75%
	TOTAL BASELINE COST	**$23,000**	**$21,642**	**94,10%**
	Front-end fee	$0	$0	
	Total Financing Required	**$23,000**	**$21,642**	**94,10%**

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		3.00	3.00	100%
International Development Association (IDA)		20.00	20.00	100%

<u>Annex 2. Outputs by Component</u>

<u>Component 1: e-Leadership Capacity and Enabling Environment ($8.0 million of which IDA financing was $7.0 million)</u>

<u>Subcomponent 1.1: Support for the e-Government Center and e-Leadership Development ($6.455 million).</u>

(a) Initial setup and operation of the e-Government Center (eGC):
- The eGovernment Center (eGC) was created in August 2010 as the GeT Project's Implementing Agency. As of December 31, 2016, it had 14 full-time consultants / experts (10 within the eGC Core Team, and 4 as PIU staff), and 4 local, fulltime and part-time, and long-term consultants.
- The success of the eGC has in the meanwhile allowed it to start managing a few other initiatives, including the Moldova GeT Project, Strategic Program for Governance e-Transformation, Paperless Government, Open Government initiative. Since 2017, it is also preparing the follow-up project called Moldova Modernization of Governmental Services Project (IDA-financed, planned for years 2018-2022).
- Gov. Resolution on the GeT/CIO Office (# 499 from July 6, 2012) created also 19 Central Public Administration authorities in the different Ministries and public institutions, as main interlocutors with the eGC. These were institutionalized in form of CIO offices with 2 to 6 employees each, in charge of general coordination/CIO, technological and infosec coordination (CTO, CISO, data analysis, project management. All central public administration authorities have a CIO/Coordinator for e-Transformation assigned, as well as well focal points for Open Data.

(b) e-Leaders, Civil Servants and IT Specialists Training Program:
- During the period 2011-2016, under the GeT Agenda, more than 120 training or information sharing events have been organized, and eGC delegated its consultants to another more than 260 training sessions, information sessions, and workshops.
- As of December 31, 2016: 4,481 public servants and other employees of CPA and LPA authorities have been trained under the Governance e-Transformation Agenda, out of which 2,667 training sessions were organized under the IDA-financed GeT Project. In more detail:
- 236 individuals received a structural formal training with certification (for CIOs and other employees from the public agencies' Departments for Coordination of Governance e-Transformation):, of which 196 individuals completed the course

"Inception in Governance e-Transformation (7 rounds, with training, and credit-based certification) and 40 individuals completed the course "Project Management for CIO/GeT Departments from Public Agencies (training and credit-based certification).

- 2,431 public servants & employees of CPA authorities GeT Project: Sessions of trainings on specific dimensions, products or initiatives under Governance e-Transformation Project (MCloud, Interoperability Framework, Open Governance, DRMS, Cyber Security, MPay, Registers Development based on ECMP etc.) and Project Management:
- 1,814 public servants took part in the "Public Administration Academy", in partnership with the State Chancellery and EGC, accomplishing the modules "Governance e-Transformation" with 4 courses for CPA and LPA authorities' servants.
- 7,321 individuals from outside of the public sector benefited from training or information sharing activities related to e-Governance and its various products (raised up to (journalists, librarians from NOVATECAmodernized, libraries, e-Gov ambassadors, students, private sector representatives, academia sector representatives, NGO representatives etc.)

(c) Strategic Communications and Partnerships:
The following is a non-exhaustive list of main activities and initiatives:[2]

- Participation in the Annual National Citizen Survey for e-Governance Transformation Support, Perception, and Uptake – carrying out annual surveys with more than 25 perception indicators, as well as data on households endowment with computers, Internet connection etc. More than 3,000 respondents. Part of the survey data is used to update the GeT Project Results Framework (this being the only WB-financed project in Moldova, and e-GovCenter - the only public institution in the country having public perception indicators as core indicators in their Results Frameworks &Performance Evaluation Matrix.
- Participation in online surveys for services digitization project prioritization (in 2011, 2013 – to opt for the groups of services or individual services to be digitized within the project, in 2014-2015 – to evaluate the accessibility and usability of Open Data and Public Services Portals, and suggest improvements; in spring-summer 2016 – to participate to the prioritization exercise in the context of elaborating the National Roadmap for Public Services Modernization Reform (approved as Govt. Resolution #966 dated August 8, 2016). The eGC has a subscription to an Online Survey Platform – SurveyMonkey - and uses it regularly for online surveys with citizens, economic entities/private companies as customers of public service providers and users of offline and online services, eGov platforms etc., as well as within the public sector, among civil servants (evaluation of trainings organized within the project, needs assessment, internal usability surveys, accessibility of draft reengineering methodologies, adjustments to public sector training curricula etc.) More than 60 online survey iterations have been used until 2017.
- Cooperation with groups of citizens/customers when designing e-Governance products –to test the beta versions or prototypes of portals and other e-Governance

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[2] The eGC team partially also relied on its Communication & Partnerships budget to support some of these activities.

products. Usability testing has been performed for each product launched before expert operational acceptance. Currently, a company is contracted to provide expert and facilitate customer feedback on a range of e-Governance platforms implemented within the Project.

- eGC has many partnership projects - with NOVATECA Project (Modernization of more than 500 libraries throughout the country), JILDP (UNDP Project to support decentralization and Local PA capacity strengthening), UN Women, ODIMM Business incubators, PeaceCorps volunteer platform, several Chambers of Commerce & Industry, private companies, and many others – within which a range of surveys have been performed financed by partners' resources, meeting with citizens or businesses focus groups, expert task forces etc. have been organized in the period 2011-2016.
- e-Ambassadors platform – librarians, students, journalists, experts, and citizens have applied for and have been granted the status as e-Governance ambassadors to perform, participate to or contribute to awareness raising campaigns and measures to promote the uptake of e-Governance products implemented within the project.
- Cooperation with the Moldova Innovation Lab (MiLab)– a social innovation lab –- financed by UNDP and attached to the eGov Center since Sept. 2014. The MiLab project promotes citizen-driven/customer-led innovation in public services and public policies (co-creation in public service reengineering (Design Thinking), behaviorism, social gaming, anticipatory governance, distributed governance, Open Data and Big Data innovation projects in the public sector).
- eGC has a collaboration with a group of active NGOs in the segment Open Governance and e-Gov since 2011. The Group is led by Moldova Open Government Institute, and organizes meetings, workshops, remote hubs, focus groups to provide to the public sector partners inputs on public policy documents, reforms etc. A particular area of interest are the Open Governance Action Plans.

<u>Subcomponent 1.2: Developing an Enabling Environment, including Policy, Legal and Technical Frameworks and Programs ($1.545 million)</u>

The following presents a list of normative acts, developed by or with the support of the Legal Team of the GeT Project:
- Government Decision #710 from Sept. 20, 2011 on Approval of the Strategic Program for Governance Technological Modernization (e-Transformation)
- Government Decision #709 from Sept, 20, 2011 on some measures in the field of Governance e-Transformation
- Government Decision # 44 from January 26, 2012 on approving the Action Plan for 2012 for the implementation of the Strategic Program for e-Transformation
- Government Order # 21-d from March 26, 2012 on common governmental technology infrastructure, based on technology „Cloud Computing"
- Government Decision # 188 from April 03, 2012 on WEB pages of public authorities
- Government Decision # 195 from April 04, 2012 on the approval of the Action Plan for the years 2012-2013 on Open Government
- Government Decision # 329 from May 28, 2012 on the Governmental e-Payment Service
- Government Decision # 330 of May 28, 2012 on creation and management of the single

- Government Portal of Public Services
- Government Decision # 499 from July 06, 2012 on Subdivision for e-Transformation in the central public administration authority
- Government Decision # 657 from Sept. 5, 2012 on approving the Regulation on content management of single Government Portal of Public Services and integration in portal of eservices and amending some Government decisions
- Government Decision #656 of September 5, 2012 on approving of the Interoperability Framework Programme
- Gov. Decision #822 from Nov. 6, 2012 on services of e-mail system of Public Authorities
- Law # 305 from December 26, 2012 on information re-use in public sector
- Government Decision #972 from December 21, 2012 on Approval of the Action Plan for Y2013 for the Implementation of the Strategic Program for Governance e-Transformation
- Government Decision #975 from December 22, 2012 on the Approval of the Action Plan for Year 2013 for the implementation of the Initiative "Paperless Government"
- Government Decision #131 from February 20, 2013 on transfer of property from EGC to the Center for Special Telecommunication to ensure MCloud operation
- Government Decision #262 from April 15, 2013 on piloting Information System of documents and records management (SIGEDIA)
- Government Decision #280 from April 24, 2013 on some action for implementation of Governmental e-Payment Service (MPay)
- Government Decision #505 from July 9, 2013 on transfer of property (scanners) from EGC to 6 central public administration authorities
- Prime-Minister's Order #0105-135 from July 19, 2013 on the preparation for the M-Pay service launching in the CPA authorities
- The Order 287-A from August 9, 2013 on the Standard Agreement and Contracts afferent to the Service Governmental Payment Gateway
- Government Decision # 624 from August 21, 2013 "On amending the Government Decision # 975 from December 22, 2012"
- Government Decision # 719 from September 16, 2013 "On amending the Government Decision # 760 from August 18, 2010"
- Government Decision # 1096 from December 31, 2013 "On Approval of the 2014 Action Plan for the Implementation of the Strategic Program for Technological Modernization of Governance
- Government Resolution #128 from February 20, 2014 "On the Governmental Shared Technological Platform (MCloud)"
- Government Decision #461 from June 16, 2014 on operating modification to the Government Resolution no. 294 from March 17, 1998 (incl. provisions on eTax information system utilization, legal weight of the electronically generated and finalized fiscal invoices and shipping invoices (through e Invoice information system))
- Government Resolution #404 dated June 2, 2014 on Piloting the Governmental Interoperability Platform
- Government Resolution #624 dated July 23, 2014 on transmitting the information system
- "Registry of Personal Data Operators" to the Center for Special Telecommunications

- Government Resolution #700 dated August 25, 2014 on approving the Open Data Principles
- Govt. Resolution #701 from Aug. 25, 2014 on approving the Methodology for Open Data Publishing
- Govt Resolution #708 from Aug. 28, 2014 on the Governmental Journaling Platform Service MLog
- Govt. Resolution #717 from August 28, 2014 on the Governmental Platform for Registers and
- Permissive Acts PGRAP (ECMP)
- Order #305 from September 9, 2014 on approving the template Agreement and Contract on provision of services from the shared Governmental technological platform MCloud
- Order #306-03 from May 21, 2015 on the implementation of the GeT Agenda
- Government Resolution #198 from April 23, 2015 on the Modification and Amending of the Gov.
- Resolution #122 from February 18, 2014 (Action Plan 2014-16_Public Service Reform)
- Order #655-A from November 23, 2015 on the approval of the template Agreement for the utilization of the Governmental Platform for registers and permissive acts" (ECMP/PGRAP)
- Order of the Govt. General Secretary #645-A from Nov. 11, 2015 on approving the Rules for administration of the Governmental Integrated Electronic Signing Service MSign
- Government Resolution nr.1090 dated December 31, 2013 on the Governmental electronic service for authentication and access control (MPass)
- Order of the Govt. Secretary General #130 din 26.03.2015 on approving specific measure for enforcement of Govt. Resolution #1090 from December 31, 2013 on the Governmental electronic service for authentication and access control (MPass)
- Order of Govt. Secretary General #413 dated June 5, 2015 on approvind the Rules for the administration of the Governmental electronic service for authentication and access control (MPass)
- Govt. Resolution #405 dated June 2, 2014 on the Governmental electronic service of integrated electronic signing (MSign)
- Order of Govt. Secretary General #451 dated July 6, 2015 on approving the Standard Agreement and Standard Contract templates for the utilization of the Governmental electronic service of integrated electronic signing (MSign)
- Order of Govt. Secretary General #645 dated November 18, 2015 on approving the Rules for the administration of the Governmental electronic service of integrated electronic signing (MSign)
- Govt. Resolution #966 dated August 9, 2016 on the approval of the Action Plan/Roadmap for Public Services Modernization Reform 2017-2021: http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=366273
- Order of Govt. Secretary General #680 dated December 21, 2016 on approving the Standard Agreement and Standard Contracts templates for the applying and verification of electronic signature authenticity in the Governmental electronic service of integrated electronic signing (MSign)

- Govt. Resolution #1432 dated December 29, 2016 on the approval of the National Action Plan for Open Governance 2016- 2018:
  http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=368355

Component 2: Shared Infrastructure and E-Services ($15.0 million of which IDA financing is $13.0 million)

Subcomponent 2.1: M-Cloud: Shared e-Government Infrastructure ($6.0 million)
- As planned, the project financed (a) the preparation of technical specifications for M-Cloud infrastructure, including development of the business model to operate it; (b) the M-Cloud shared computing infrastructure, comprising core processing, storage, virtualization and service delivery platforms, as well as auxiliary systems such as power supply, air conditioning, etc.
- Among the agencies which have migrated their systems to M-Cloud, there are The State Chancellery, Ministry of Agriculture and Food Industry, Ministry of Justice, Ministry of Education, Ministry of Defence, Ministry of Foreign Affairs and European Integration, Ministry of Labour, Family and Social Protection, Ministry of Interiors, Ministry of Environment, Agency for Land Relations and Cadaster, Ministry of Health, Agency for Regional Development and Constructions, National Company for Health Insurance, National Chamber for Social Insurance, State Tax Service, State Labour Inspection, State Agency of Material Reserves, National Standardization Institute, National Accreditation Center, and others.
- The Platform won an international prize as "Best Cloud Project in Central & Eastern Europe", in 2012.

Subcomponent 2.2: e-Services Development ($9.0 million)
The following lists main e-services developed. For more detail and explanation, kindly also refer to Supporting Document 2, as annexed.

(a) e-Services for Citizens and Businesses:
- e-Application for Criminal Records: Monthly Uptake Rate in December 2016: 99.15% (out of 14,361 requests, 14,239 were submitted using directly or indirectly the information system).
- e-Application for an Economic Activity License: Uptake since launch (2012): 79.72% (out of 26,227 applications submitted by economic entities, 20,910 applications were submitted using the information system).
- E-Visa application: The e-service for non-citizens e-Visa provides the possibility for filing visa applications and receiving visa in electronic format (online application and payment).
- Information System "e-Factura" (e-Invoice): Information system e-Factura (e-Invoice) is an electronic service, having as a fundamental objective the automation of the documents flow between the suppliers and beneficiaries of Waybills and Tax Invoices. The system will also have an impact on the State Tax Service's activity related to the record-keeping and audit of Waybills and Tax Invoices.
- e-Normative Database in Construction (Portal): Quick and simple access to the normative acts database in constructions and territorial development.

- Information System "Active Access to the Real Estate Registry", ensuring active access to the databases of the Real Estate Registry (held & administered by "Cadastru") for judicial executors in order to insert or delete notifications online.
- Digitization of Civil Status Archive: Digitization of 4.8 million civil status acts/documents, with partial inclusion of metadata, and development of the information system for data storage.
- Digitization of the Cadastral Archive: Digitization of 20 million cadastral archive files, significantly improving the quality and efficiency of services delivered to citizens, and of management of real estate & property information by "Cadastru".
- e-Reporting to the CNAM and CNAS: Established in February 2013, this platform allows for the reporting to the National Chamber for Health Insurance and to the National Company for Social Insurance. Both systems are integrated with the Mobile Signature.

(b) Enabling Services ("Enablers"):
- Governmental Services Portal: The online one-stop-shop of Public Services to Citizens and Businesses www.servicii.gov.md, launched on May 10, 2012. As of today, the Portal provides exhaustive information (service passports) on 572 public services on its informative interface, and access to 126 public e-services on its interactive interface. Since April 2012 (official launching of the Portal - May 10, 2012) until December 31, 2016, there have been 673,402 unique visitors, 1,097,331 total visits, with a share of new visitors at 62% and a share of returning visitors at 38.6%. Circa 15% of visits are from abroad.
- MPay – Governmental Electronic Payments Portal: Launched in September 2013, the total number of transactions processed through M-Pay until Dec. 31, 2016 amounts to 3,817,371 Average number of transactions processed per day: 3,167. Maximal number of transactions processed per day: 17,315.
- MSign – Integrated Governmental Electronic Service Digital Signature. Launched in May 2013, M-Sign is an integrated, secured and flexible mechanism for application and verification of the digital signature authenticity by users, incl. in the context of using information systems and e-services.
- M-Pass (www.mpass.gov.md): National service of authentication and access to public e-services, integrating all authentication mechanisms currently available in Moldova.
- M-Connect: Governmental interoperability platform for organizational, semantic and technical integration of the various government services.
- Mobile Digital Signature: Launched on September 14, 2012 Service implemented in partnership with the SE Special Center for telecommunications and the mobile phone operators Orange and Moldcell (Telia Sonera Group). Moldova - 7th country in the world launching the mobile signature.
- Information System "e-Integrity" (e-CNI): InfoSystem intended to simplify the filling in, archiving, checking and automated examination of statements of income, assets and personal interests, facilitating the electronic access of individuals & institutions to public information.
- Enterprise Content Management Platform (ECMP): Serving as a platform for easy (no-code) creation of new typical applications and information systems (IS) mainly for registrations, appointments and authorizations.

- <u>Open Governmental Data Portal</u>: launched on April 15, 2011, it now holds 937 open data sets, from 48 central public administration agencies. Most active contributors included the Ministry of Health, Ministry of Interiors, National Statistics Bureau, Ministry of Economy, and Ministry of Education. Number of unique visitors: amounts to 248,292, number of downloaded datasets is 2,412,474.
- <u>Institutional Open Government Data Catalogue</u>: launched as an effort to encourage ministries to gain an overview over the data they could make available publicly, it includes now contributions from the Ministry of Education, Ministry of Justice, Ministry of Environment, Ministry of Defense, National Bureau of Statistics, National Center for Judiciary Expert Examination, Ministry of the Economy, Ministry of Finance, the Frontier Police

<u>Communications Outputs</u>

The project has maintained an active engagement with citizens and interested parties. As a reflection of this, results have been shared online, and a long list of over 200 communications products have been developed, around 50% of them also available in English language. Information materials have reached more than 870.000 citizens, and there are around 130 tutorials available for citizens on YouTube. Television and radio broadcasting was used extensively during public information campaigns. The following are a few, illustrative links:

eGov Products' Monthly Uptake Statistics (transformed into General Grafic Monthly Barometers):
- http://egov.md/en/resources/infographics/uptake-e-government-products-launched-under-e-transformation-agenda-situat-10
- http://egov.md/en/resources/infographics/assimilation-mpay-service-june-2016
- http://egov.md/en/resources/infographics/uptake-e-government-products-launched-under-e-transformation-agenda-situati-8

Annual Survey Results:
- http://egov.md/en/resources/polls/annual-national-survey-2015-level-support-granted-implementation-e-government
- http://egov.md/en/resources/polls/annual-national-survey-2015-rate-citizens-requiring-public-services-provided-central
- http://egov.md/en/resources/polls/national-survey-2015-level-access-web-pages-governmental-institutions

Generalized Progress Reports for the Public:
- http://egov.md/en/transparency/reports/governance-e-transformation-project-moldova-report-period-2013-2015

Experience Papers, Study Cases, Guidelines:
- http://egov.md/en/resources/guides-and-documents/co-creation-service-redesign-experiment-must
- http://egov.md/en/resources/guides-and-documents/guide-user-fee-payment-kindergarten
- http://egov.md/en/resources/guides-and-documents/rules-using-social-media-government-institutions

Blog with several case studies:
- https://guvernonline.wordpress.com/

Youtube channel with tutorials, promos etc.:
- https://www.youtube.com/channel/UCQiYfbOzuf2A4GH2R_inZfQ

Annex 3. Economic and Financial Analysis

a) Economic and Financial Projections at Project Appraisal

The economic and financial projections made at project appraisal calculated the main direct benefits to the government and citizens. The approach taken was generally to compare an "as is"-scenario, against a scenario of the proposed introduction of a state-of-art cloud infrastructure. The predictions made by times of project appraisal pointed to expected, significant cost savings:
- In terms of a reduction in processing costs related to use of the Cloud Computing platform, the analysis indicated that the net present value of the yearly savings for a 10-year period would be $13.4 million (based on the assumption that the savings will begin to accrue about one year after the initial implementation of the project).
- In terms of an increased productivity of government workers, the net present value of savings through the provision of e-services was $6.1 million. Again, a 10 percent discount rate was used.
- In terms of savings for the population that will access the e-services, a net present value for citizens and businesses savings was estimated at $25.9 million in terms of time saved in carrying out transactions with the Government. These calculations were done for the 10-year period after effectiveness—discounting the benefits at a rate of 10 percent per year.

There were other benefits that were mentioned as additional positive externalities, while not including them into the core analysis:
- The consolidation of data centers and the use of more modern technology was expected to result in a lower power consumption.
- The introduction of e-services and online document management systems for the Government was estimated to reduce use of paper, landfill waste, and save trees.

b) Economic and Financial Projections at Project Closure

The economic and financial projections undertaken at project closure generally rely on the same approach to compare the scenario without the results the project has achieved, against a scenario "as is today" including the now existing state-of-the-art cloud infrastructure and existing e-government services.

Certainly, the predictions made by times of project appraisal had to rely on a range of assumptions and general experience with cloud infrastructure and e-services, aiming to approximate predictions to a realistic scenario of results to be likely achieved. It is in this

context that complementary information on additional positive externalities was introduced, such as reduction in use of paper.

In contrast, the successful installation of new infrastructure and introduction of e-services through the project allowed for a more detailed and concrete assessments of gains and benefits in the core aspects of the project. Attention has therefore mostly been given to the main infrastructure and services the project has funded, including (a) the M-Cloud and its operational cost saving for the government, (b) M-Connect and its cost savings through increased government inter-agency efficiency, and (c) M-Pay and its cost savings through electronic payments. These main pillars confirm cost savings.

In line with the original project design and its original economic and financial analysis, some categories of potential savings were not considered. In particular, the possibility of a reduction in the number of civil servants due to the introduction of electronic services was not considered as the project did not aim at laying off civil servants, and the fact-finding mission did not find evidence for important cost savings due to reductions in the number of staff. Relocation of public employees might be an issue the follow-on project may need to discuss, as it aims at a deeper re-engineering of public service delivery in different ministries and institutions of the public administration.

c) Assumptions and Definitions

A few definitions and assumptions for the analysis may be noted:
- The structure of the operating cost budget takes into account three types of spending: CAPEX and OPEX, which have meanings similar to those commonly used in financial controlling, with some specification:
  - Capital expenditure (CAPEX) generally refers to costs related to acquiring and upgrading of fixed assets (assets used for a longer period). The general definition has been amended to include costs incurred during set-up and implementation of sectorial services projects, irrespective of whether they are recorded as tangible/intangible assets or not. In the context of eGC's operating budget, capital expenditure include the costs associated to eGC technical consultants involved in the design, execution and implementation of applications for sectorial services.
  - Operational expenditure (OPEX) generally refers to costs related to day-to-day operation of applications and general functioning costs of eGC. Operational expenditure records include costs as pay-roll cost, distribution cost, incremental cost, outsourcing services.
- To properly assess overall incurred costs, a bottom-up approach has been used. Primarily, costs were distributed per service, considering service type and allotment per project. A particular approach was used for payroll-related costs. For those instances where a cost is incurred in relation to several projects, a split has been performed, based on eGC estimations of the effort required by each project. In this sense, all the pay-roll costs incurred throughout the period 2010 – 2016 have been distributed per service, in accordance with an extent of effort provided by the respective consultant, for each service.

d) M-Cloud and Operational Cost Saving

Implementing the public sector M-Cloud was a suggestion with the intent to reduce the number of underutilized and oversubscribed servers, gradually reducing the purchase of IT hardware infrastructure and replacing it with the storage and computing power of the virtual cloud technology. Additionally, the M-Cloud infrastructure would serve as the foundation for the creation and implementation of services, such as M-Connect, M-Pay, M-Sign, M-Access, M-Log, M-Pass, etc., which, as well, implied cost savings.

When identifying and assessing the "savings" generated by the M-Cloud infrastructure, two different scenarios were compared, (i) "doing business with the new cloud", vs. (ii) doing business as usual (premises costs, yearly spending, etc. without cloud technology). The basic question the cost savings framework (below) assesses is therefore: If the institutions, which has adopted the cloud technology made available by the project, would acquire the same resources that they are using currently through the M-Cloud assuming a comparable level of functionality, what would be the costs?

When a public authority acquires hardware equipment, it in fact purchases three technical backbone components, which are CPU (Central processing unit), RAM (Random Access Memory) and Storage. These components can either be provided by making IT investments through every public sector institution on yearly basis, or by making a joint acquisition and implementation of Cloud computing technology across the public sector, covering jointly overall investment costs (CAPEX) and associated operation costs (OPEX) for all / some public institutions (i.e. a unified / partly unified approach). To compare costs under the different approaches, the following cost elements have therefore been taken into account:

a) Capital investment (CPU, RAM, STORAGE)
b) Materials and supplies
c) Personnel.

Savings were evaluated by applying the below cost-saving framework model, which has been devised in accordance with commonly used IT investment frameworks. To allow for a comparison, the formula defines the per-unit costs for all CPU, RAM, and Storage. The M-Cloud real resource utilization of CPU, RAM and Storage (virtual units) were converted into CPU, RAM, Storage (physical units), through conversion coefficients. The assessment has been conducted, taking into account that by the December 2016, 32 public institutions are relying on the M-Cloud in their day-to-day activities. For a realistic assessment, it was also important to take fiscal periods into account and pay attention to expenditures such as reflected in state financial reports, contracts, payments records, and government decisions.

Savings Benefit Category	Calculation	Evidence	Objectives
Reduction of Budgeted Expenditures (a reduction in the budgeted resources e.g. staff, materials, equipment) used for an activity as a result of MCloud project deployment across public sector.)	**The general formula** 1. Saving Benefit = Cost $_{on premises}$ − Cost $_{MCloud}$ *or by substitution,* $S_{benefit} = Q^{f*} - Q^{v**}$ *where,* $Q^f = CPU^f + RAM^f + Storage^f + Associate\ services^f$ *and* $Q^v = CPU^v + RAM^v + Storage^v + Associate\ services^v,$ *by conversion coefficient* $1\ CPU^f = 5\ CPU^v$; $RAM^f = 1,2\ RAM^v;$ $Storage^f = Value\ HDD\ Disk\ x\ R$ redundancy coefficient + S unit storage infrastructure; 2. Associative service – maintenance, collocation and personnel; 3. The calculus is performed for middle –ranged infrastructure, taking into account the lowest market prices per HDD discs and storage infrastructure.	1. Detail object Code expenditure reports; 2. Budget documents; 3. Payments documents; 4. Contracts; 5. Invoices; 6. HR / Payroll system reports	a. Measure financial benefits realized by the result of Cloud computing technology implementation; b. Document and support the savings measurements with evidence, establishing whenever possible a clear link to official records of actual financial transactions; c. Produce good faith projections of savings based on information currently available.

Results point to strong savings through the introduction of the M-Cloud.

Presenting results in form of per-unit costs /savings, most important savings in CAPEX are achieved in CPU and in storage infrastructure, where the virtual storage capacity of the cloud creates per unit costs for the storage, but no additional hard infrastructure. Total CAPEX savings per annum are determined at around $3.2million, so on average $100.000 for each of the currently 32 public sector institutions profiting from the M-Cloud. Most important cost savings in OPEX exist in maintenance and administration, where the central cloud technology has significant cost advantages compared to the operation of decentralized systems, valued at around 600K per annum. In total, cost benefits of the M-Cloud compared to the operation of decentralized, on premise systems, are determined at $3.8million p.a. / $38million over 10 years. The following presents the results in form of comparative tables and a diagram.

	SUM Value M-Cloud, $	SUM Value M-Cloud, %		SUM Value on premises $	SUM Value on premises %
CAPEX	112582	38,95%	CAPEX	3308649	81,60%
CPU	54015	47,98%	CPU	2226000	67,28%
RAM	18085	16,06%	RAM	14468	0,44%
STORAGE	40482	39,69%	STORAGE	108181	3,27%
STORAGE INFRASTRUCTURE	-	0,00%	STORAGE INFRASTRUCTURE	960000	29.01%
OPEX	176446	61,05%	OPEX	746229	18,40%
MAINTENANCE AND ADMINISTRATION	66510	37,68%	MAINTENANCE AND ADMINISTRATION	587162	78,68%
COLLOCATION	68721	38,99%	COLLOCATION	136008	18,23%
PERSONNEL	41215	23,36%	PERSONNEL	23099	3,09%
GRAND TOTAL	289028	100,00%	GRAND TOTAL	4054878	100,00%
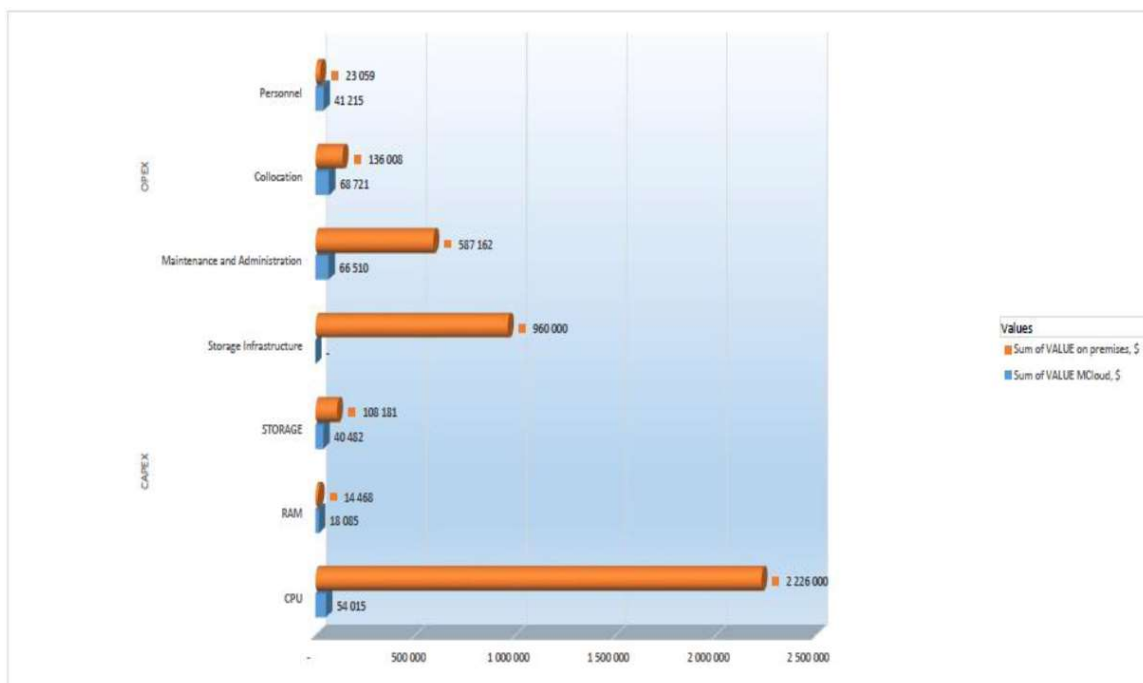
e) M-Connect and Cost Savings through Increased Efficiency

M-Connect is an interoperability platform facilitating the exchange of data between different bodies of the public administration. Through the interoperability platform, the public authorities exchange data such as certificates, reports etc. in real time, without the need for duplicate requests to citizens and the businesses to submit such information. The advantages include:

i. higher efficiency and effectiveness in information exchange between government bodies;
ii. lower burdens for citizens and businesses interacting with the government;
iii. higher security of information systems in the central and local public administration;

Assessment of cost savings focused on i), i.e. higher efficiency in government administration. To allow for a specific assessment and base the assessment on concrete figures, one specific

case has been reviewed in detail, i.e. the childcare allowance, a one-time payment provided by the National Social Insurance House (CNAS).

Cost savings listed in the below overview include staff working time savings (i.e. the combination of time and salary costs), savings for traveling from one office to the other, and costs for (duplicative) preparation of documents, which could be avoided through the operation of the interoperability platform. On the cost side, costs for the platform and its amortization over time have been included.

Description	U.M.	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	2	3	4	5	6	7	8	9	10	11
Administrative Burden Value/Valoarea totala a Sarcinii	MDL/Year	6 375 769	7 583 654	7 843 107	9 426 603	10 861 923	12 036 486	13 181 722	14 327 969	15 474 196
Working hour/MDL Ratio/ Raportul ore lucratoare/lei[3]	MDL/hour	163	192	207	244	281	311	340	370	399
Traveling time to the office of the service provider/Deplasarea catre oficiul prestatorului de serviciu[5]	hour	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Preparation and submission of the set of documents to the provider's office/Pregatirea si depunerea setului de documente la oficiul prestatorului[6]	hour	24,6	24,6	24,6	24,6	24,6	24,6	24,6	24,6	24,6
Minimum guaranteed salary/Cuantumul minim garantat al salariului[4]	MDL/month	1 100	1 300	1 400	1 650	1 900	2 100	2 300	2 600	2 700
Tranzaction[1]	#	39 182	39 436	37 871	38 616	38 610	38 743	38 743	38 743	38 743
Operational Expenditures InterOp Platform	MDL	-	-	-	706 672	1 447 020	1 231 166	7 747 648	8 136 030	8 641 782
Capital Expenditures InterOp Platform (amortization)	MDL	-	-	-	-	-	-	4 167 910	4 167 910	4 167 910
Savings	MDL	6 375 769	7 583 654	7 843 107	8 719 831	9 404 903	10 804 330	1 276 164	2 035 018	2 774 504
Cost/Benefit Ratio								1,11	1,17	1,22

Notes:

1. http://statbank.statistica.md/pxweb/pxweb/ro/20%20Populatia%20si%20procesele%20demografice/20%20Populatia%20si%20procesele%20demografice__POP030/POP030200reg.px/table/tableViewLayout1/?rxid=2345d98a-890b-4469-bb1f-9b566f59b3b5 Methodological Guide on Public Services Reengineering, elaborated according to the provisions of Law no.306 of 26.12.2012 on the re-use of public sector information Chisinau 2014 (support for the implementation of public services reform in the
2. Republic of Moldova)/ Ghid Metodologic privind reingineria serviciilor publice, elaborat conform prevederilor Legii nr.306 din 26.12.2012 cu privire la reutilizarea informatiilor din sectorul public Chisinau 2014 (suport in implementarea reformei serviciilor
3. Source: http://www.administrative-burdens.com, Administrative Burden Formula (SA): S_A = Cost x Time x Tranzaction QTY
4. Government Decision n# 165 dated with 09.03.2010/ Hotarirea Guvernului nr. 165 din 09.03.2010 cu privire la cuantumul minim garantat al salariului in sectorul real
5. Survey among the recipients of childcare allowance made by the e-Gov Centre in common with UNDP/Sondaj printre cetatenii beneficiari de indemnizatie pentru ingrijirea copilului, realizat de CGE in comun cu PNUD
6. Number of monthly working hours/Numarul orelor lucratoare lunare   169   h

The assessment points to a cost savings potential in the range of LEI 6-8 million through the improved efficiency in service provision regarding the childcare allowance. These potential savings were realized with the introduction of M-Connect, deducting however operational expenses to operate the digital exchange system and its amortization costs. Still, in total, the assessment points to a cost reduction in the administrative burden by LEI 1.3million (corresponding to $70.000) in 2017, per annum, and a predicted LEI 2.7million (corresponding to $150.000K) by 2019. In conservative estimate, savings of around $7million over a 10-year period can be expected.

f) M-Pay and Cost Savings through Electronic Payments

M-Pay is the governmental service for electronic payments introduced by the project, allowing to pay for various government services online. Although M-Pay is primarily targeting electronic services in the public sector, it can also be used for commercial services. The implementation of M-Pay was the most complex e-service developed by the EGC under the project, proving the constructive cooperation between the EGC, the Special

Telecommunication Center, the Ministry of Finance, the National Bank, commercial banks in Moldova, as well as strong partnerships with private sector service providers that helped develop the service technically.

The savings realized through the introduction of M-Pay have been calculated relying on a similar approach as used for the assessment of the implementation of the M-Connect infrastructure. Factors considered to assess savings include time savings for payments (including its costs dimension based on average salaries), transport cost savings, and number of transactions. Savings are partially set off by operational and capital costs for the platform.

#	Indicator	Period, $ USD					
		2014	2015	2016	2017	2018	2019
L.	Administrative Burden¹	619 286	957 676	2 702 177	7 952 559	13 646 223	22 084 880
1.1	Average amount of a salary per economy (monthly basis)²	301	234	509	784	1 059	1 334
1.2	time (hours/day)³	0,47	0,47	0,47	0,47	0,47	0,47
	Tariff per hour, ("1.1"/168 hours)	1,79	1,39	3,03	4,66	6,30	7,94
1.3	Mileage expenditure (public transport)	0,28	0,21	0,20	0,19	0,18	0,18
1.4	Transactions⁴	546 089	1 104 483	1 656 725	3 313 449	4 307 484	5 599 729
2.	Operational costs (Opex)	164 831	127 874	40 830	-	-	-
3.	Capital Costs (Capex)	-	-	-	34 578	34 578	34 578
5.	Total Cost of ownership	164 831	127 874	40 830	34 578	34 578	34 578
6.	Earnings(Savings), USD	454 455	829 802	2 661 347	7 917 981	13 611 645	22 050 301
7.	Cost Benefit Ratio	1,4	1,2	1,0	1,0	1,0	1,0

Note:

1	Administrative Burden	Methodological Guide on Public Services Reengineering, elaborated according to the provisions of Law no.305 of 26.12.2012 on the re-use of public sector information Chisinau 2014 (support for the implementation of public services reform in the Republic of Moldova)/ Ghid Metodologic privind reingineria serviciilor publice, elaborat conform prevederilor Legii nr.305 din 26.12.2012 cu privire la reutilizarea informaţiilor din sectorul public Chisinau 2014 (suport in implementarea reformei serviciilor publice in Republica Moldova)
2	**Average amount of a salary per economy (monthly basis)	Government Decision # 1000 as of 13.12.2013 on approving the average amount of a monthly salary per economy, projected for 2014 - 4225 lei
2	Average amount of a salary per economy (monthly basis)	Government Decision # 974 as of 04.12.2014 on approving the average amount of a monthly salary per economy, projected for 2015 - 4 500 lei
3	Time spent	Time use survey. http://www.statistica.md/public/files/publicatii_electronice/Utilizarea_timpului_RM/Utilizarea_timpului_RM.pdf
4	Transactions	statistics on transactions

Findings point to significant cost savings through M-Pay. In 2016, the cost per transaction "doing business-as-usual" i.e. without M-Pay is estimated at $1.63USD, compared to cost with M-Pay of only $0.02USD per transaction. With 1 656 725 transaction in 2016, this amounts to savings of $2.6million per year, or $26million over a 10-year timeframe (not yet factoring in expected, increased usage levels of the platform).

g) Conclusion

The economic and financial analysis followed generally the same methodology as used during project preparation, comparing the scenarios with, and without, the investment in a state-of-the-art cloud infrastructure and the introduction of a range of e-services. As the cloud infrastructure and e-services have been successfully established by the project, the analysis was able to base itself more on real cost/savings estimates, compared to the analysis at project preparation stage which had to rely on more general assumptions.

To capture the essence of the project, the assessment focused on the main aspects of the improved ICT environment which were also the parts of the project which consumed the most important amounts of the funds, i.e. the M-Cloud as the main piece of the infrastructure,

M-Connect as the central pieces of interoperability of the new government e-architecture, and M-Pay, the main horizontal enabler supporting all government e-services with the option to carry out payments online.

The analysis showed positive results, generally confirming the predictions made at project development stage.

The analysis pointed to savings of around $3.8million per annum ($38million over 10 years) for M-Cloud; cost savings of $70.000 per annum ($7million over 10 years) for M-Connect; and $2.6million per annum ($26million over a 10 years) for M-Pay. In total, the savings achieved by the key infrastructure and services installations therefore amount to $7.1m per annum, which would mean an amortization of the $20m project costs in less than 3 years. (For comparison, the analysis at project development predicted an amortization of the costs of suggested $13,4m for the could infrastructure alone, in 2.5 years)

As these results focus on the key components of the project, and do not yet include a range of other benefits, the real benefits must be expected to be higher. In particular, additional benefits not fully quantified in the above analysis, include benefits in terms of time and cost savings for citizens and business, costs savings through lower power consumption, and reduced use of paper and less waste fill.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Sandra Sargent	Senior Operations Officer	GTI09	TTL
Constantin Rusu	Public Sector Specialist	GG015	
Elena Corman	Procurement Specialist	GG003	
Sergiu Panaghiu	IT Analyst	ITSCR	
Oxana Druta	Financial Management Specialist	GG021	
Arcadii Capcelea	Senior Environmental Specialist	GEN03	
Irene Guadalupe Rubio Gonzalez	Consultant	GTI09	
Juan Navas-Sabater	Lead ICT Policy Specialist	GTI09	
Siddhartha Raja	Senior ICT Policy Specialist	GPSJB	
Randeep Sudan	Adviser	GTIIC	
Eloy Eduardo Vidal	Consultant	GTIDR	
Grace Tamarpalli James	Temporary	GTC06	
Supervision/ICR			
Jane Lesley Treadwell	Practice Manager	GTI09	
Alexander Kremer	Country Manager	ECCMD	
Bertram Boie	Senior Economist	GTIDR	TTL for ICR

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	**USD Thousands (including travel and consultant costs)**
Lending		
Total:	184.75	1.430.994
Supervision/ICR		
Total:	2	tbd

Annex 5. Beneficiary Survey Results

Kindly refer to Supporting Document 2 – Perception Report.

Annex 6. Stakeholder Workshop Report and Results

A stakeholder workshop was carried out in December 2016, which confirmed the positive impressions of the project as reflected in more detail in the regular survey results.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

| CANCELARIA DE STAT
A REPUBLICII MOLDOVA | | STATE CHANCELLERY
OF THE REPUBLIC OF MOLDOVA |

Nr. 21-07-4911.   Chişinău   «22» 06. 2017

Mr. Alexander Kremer
Country Manager for Moldova
Europe and Central Asia
World Bank

Re: Moldova Governance e-Transformation Project
Project Completion Report

Dear Mr. KREMER,

Referring to the Moldova Governance e-Transformation (GeT) Project closed on December 31, 2016, this is to kindly acknowledge that the State Chancellery and Moldova e-Government Center have thoroughly examined the draft Implementation Completion and Results Report (ICR Report) drafted by the World Bank evaluation team, and considers that it covers the achievements, results, lessons learned in a consistent, coherent and objective manner. Moldova e-Government Center and the State Chancellery transmitted a unified feedback to the draft report.

We are glad to ascertain that the evaluation statements presented in the draft ICR Report outline the efficiency and high performance of key stakeholders in implementing the Project, and provide valuable inputs, conclusions, and recommendations for sustainability. We feel very motivated by the fact that all the Project's target performance indicators were exceeded as of the Project completion. We consider the Project a good practice in promoting deeply transformative digital innovation reforms in the public sector, in collaborating efficiently with an international donor organization. We are honored to become - in only several years of Project implementation - an expertise hub for e-Governance in the region, having already welcomed delegations of public sector officials from more than 10 countries interested in our e-Governance journey.

We shall further ensure the effective (re)use of and capitalization on the modern e-Governance platforms launched under GeT Project, as these are the foundation for the Public Services Modernization, our key priority under the Public Administration Reform. The eGov platforms launched under the Project will be strengthened, expanded, upgraded within the dedicated digital component under the Modernization of Governmental Services Project, currently at the stage of final preparations with the World Bank.

As we fully acknowledge the World Bank transparency policy, and share the same transparency principles, this is to kindly inform you that we agree with the final ICR Report to be published on all relevant information resources. Moreover, we shall ensure the final ICR Report publication and references to it on our information resources.

Using this special opportunity, I would like to express, on behalf of the Moldovan Government, our highest considerations and gratitude to the World Bank for the permanent support, coordination, and valuable guidance throughout the Project implementation, as these have been among the key factors for the Project's success.

We look forward to continuing our fruitful collaboration in the public services modernization reform, to deliver the best possible results in terms high quality public services and more efficient, transparent, responsive, and inclusive governance processes.

Sincerely,

Lilia PALII
Secretary General of the Government

Annex 8. Comments of Co-financiers and Other Partners/Stakeholders

Not applicable.

Annex 9. List of Supporting Documents

- Detailed Monthly Barometer on Uptake of e-Services and Platforms Launched within the Governance e-Transformation Agenda, as of January 1, 2017

- Moldova Governance E-Transformation Project: Borrower's Implementation and Completion Results Report 2011-2016, March 2017

- Citizens' perception, uptake and support for the e-Transformation Governance Agenda in the Republic of Moldova, 2016

MAP

UKRAINE

MOLDOVA

To Chernivtsi
To Vinnytsya
To Vinnytsya
To Voznesens'k
To Zhmerynka
To Pascani
To Birlad
To Birlad
To Odesa
To Artsyz
To Izmayil
To Bucharest and Constanta

Dnestr

Ocniţa
Briceni
Moghiliov-Podolski
Donduşeni
Edineţ
Soroca
Drochia
Rîşcani
Camenca
Costeşti
Floreşti
Nistru
Şoldăneşti
Glodeni
Bălţi
Rezina
Rîbniţa
Balatina
Sîngerei
Prut
Făleşti
Teleneşti
Chiperceni
Sculeni
Mt. Bălăneşti (430 m)
Orhei
Dubăsari
TRANSNISTRIA
Ungheni
Călăraşi
Criuleni
Nisporeni
Străşeni
Stăuceni
Grigoriopol
CHIŞINĂU
Lăpusna
Ialoveni
Anenii Noi
Bender (Tighina)
Tiraspol
Leuseni
Hînceşti
Slobozia
Căinari
Căuşeni
Plain
Cimişlia
Leova
Bugeac
Ştefan-Vodă
Nistru
Comrat
Basarabeasca
Cantemir
GĂGĂUZIA
Ceadîr-Lunga
Cahul
Taraclia
GĂGĂUZIA
Vulcăneşti

ROMANIA

UKRAINE

Black Sea

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0 10 20 30 40 Kilometers
0 10 20 30 Miles

MOLDOVA

○   SELECTED CITIES AND TOWNS
◎   AUTONOMOUS TERRITORIAL UNIT CAPITALS
◉   RAIONS OR MUNICIPALITIES CAPITALS*
✪   NATIONAL CAPITAL
      RIVERS
      MAIN ROADS
      RAILROADS
      AUTONOMOUS TERRITORIAL UNIT BOUNDARIES
      RAIONS OR MUNICIPALITIES BOUNDARIES
      INTERNATIONAL BOUNDARIES

*Names of the raions or municipalities are identical to their capitals.

MAY 2007

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